

NOT GUILTY BY REASON OF BRAIN INJURY: PERCEPTIONS OF GUILT AND SENTENCING

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The current study investigated whether educating mock jurors about the post-injury consequences resulting from a traumatic brain injury (TBI) influenced their perceptions of morality, guilt, and sentencing in cases where the defendant has sustained a TBI. Participants read either an educational brochure about jury duty or a brochure about brain injury, and were then presented a mock trial transcript about either a defendant with severe, mild, or no TBI on trial from the crime of voluntary manslaughter. Mock jurors who read the brochure about brain injury perceived the defendant less guilty and most deserving of a rehabilitation sentence. The results suggest that the mock jurors considered the brain injury and the post-injury consequences when deciding the perceived guilt and punishment of the crime. Thus, defense attorneys should provide extensive information about mental disorders to assure the most appropriate verdict is determined.

Keywords: traumatic brain injury (TBI), jury perception, jury deliberation, criminality, misconceptions, forensic population

Approximately 25-87% of any sampled inmate population has reported sustaining at least one TBI in their lifetime, compared to merely 8% of the general population (The Centers for Disease Control and Prevention, 2014). This discrepancy between the two populations suggest that individuals with brain injuries are more susceptible to socially unacceptable behaviors, therefore increasing the frequency of criminal behavior (Brower & Price, 2001; Farrer & Hedges, 2011; Lane, St. Pierre, Lauterbach, & Koliatsos, 2016; Sarapata, Herrmann, Johnson, & Aycock, 1998; Shiroma & Ferguson, 2010; St. Pierre & Parente, 2016; Tateno, Jorge, & Robinson, 2003). Several studies have reported that individuals with TBI participate in crimes more often than they would if they did not have a brain injury (Sarapata et al., 1998; St. Pierre & Parente, 2016). This prevalence of criminal behavior is usually attributed to the individual's difficulties anticipating the consequences of their actions, problems making appropriate decisions, or limited ability to formulate effective plans and strategies (Damasio, Tranel & Damasio, 1990; Lane et al., 2016).

Therefore, it is evident that individuals with a history of TBI are more susceptible to aggressive tendencies, and though not causal, previous research has reported a significant correlation between TBI and criminality (Barnfield & Leathem, 1998; Colantonio,

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Stamenova, Abramowitz, Clarke, & Christensen, 2007; Perkes, Schofield, Butler & Hollis, 2011; Sarapata et al., 1998; Tateno et al. 2003; Turkstra, Jones, & Toler, 2003).

TBI AND INCARCERATION

The underlying associations between TBI and behavioral dysfunction derive from the cognitive and emotional impairments that result from TBI (Turkstra et al., 2003). Impulsivity and aggression are, perhaps, the biggest behavioral consequences of TBI (Perks et al., 2010). Turkstra and colleagues (2003) indicated that cognitive and emotional impairments precipitate inappropriate behavior during social encounters. Individuals with TBI tend to make poor social judgments, overreact to minor provocation, strike out impulsively, and display heightened anxiety and anger relative to non-TBI groups (Sarapata et al., 1998). Such behaviors often lead to police interventions with persisting legal consequences (Lane et al., 2016; Turkstra et al. 2003).

Because individuals with frontal lobe injury are known to have difficulty changing future behavior based on previous consequences, sentencing that emphasizes punishment will be less successful than sentencing that involves teaching alternative coping strategies (e.g., rehabilitation facilities). Turkstra and colleagues (2003) suggested that obtaining information about the defendant's history and identifying the severity of the injury, as well as its impairments will provide the courtroom with additional information necessary to determine the appropriate sentence.

This review of the literature revealed a consensus regarding the correlation between TBI and criminality (Barnfield & Leathem, 1998; Colantonio et al., 2007; Perks, et al. 2011; Sarapata et al., 1998; Turkstra et al., 2003; Tateno et al., 2003). However, each TBI produces volatile deficit patterns and the outcome can vary depending on pre- and post-injury factors, such as socioeconomic status, education, gender, substance abuse, psychiatric comorbidities, pre-injury aggressive traits, and a tendency to engage in risky behavior (Lane et al., 2017; Tateno et al, 2003; Turkstra et al., 2013). However, there is little evidence that sheds light on the question of whether aggressive behaviors predated, were caused by, or were exacerbated by the brain injury. Therefore, with at least half of any forensic population reporting that they have sustained a minimum of one TBI in their lifetime (Farrer & Hedges, 2011; Hughes et al., 2015; Sarapata et al., 1998; Shiroma et al., 2010), it is reasonable to suggest that the criminal justice process, starting with the court system, should be well-informed of the neurological and psychological impairments caused by a TBI. This may be especially important before jury deliberations and prior to sentencing.

JUDGMENTAL BIASES TOWARDS DEFENDANTS WITH BRAIN INJURY

While jurors do not determine sentencing, they do decide the guilt or innocence of the defendant. A juror or a judge may not realize the behavioral, cognitive, and social consequences affected by TBI before forming judgments about the defendant, which may influence the overall verdict or sentencing of the case. Sarapata and colleagues (1998) suggested that defendants with TBI are prosecuted harsher and given harsher punishments

because they were not properly represented in court. Therefore, it is reasonable to suggest that if jurors are not made aware of the neurological, behavioral, and cognitive effects caused by a brain injury, then their judgment of guilt or innocence may derive from limited information (Lane et al., 2017).

Specifically, if the defendant suffers from a TBI, are the jurors knowledgeable about how a TBI can affect a person's personality and behaviors? With what can be an overwhelming amount of unfamiliar legal jargon and complex jury instructions given in the courtroom (Daftary-Kapur, Dumas & Penrod, 2010), would jurors be able to process additional information regarding the defendants neurological status? Elwork and colleagues (1977) described that jurors rely on "commonsense justice", meaning that if they do not understand the instructions given to them in the courtroom, they will rely on their own personal judgments and experiences, which may bias their perceptions of the defendant and the facts of the case.

Unfortunately, there is insufficient research assessing the level of education jurors have regarding mental disorders, specifically psychiatric disorders after TBI; or whether this level of education influences or hinders the verdict of a case involving defendants with TBI. St. Pierre & Parente (2016) explored how a mock juror would perceive the crimes committed by defendants with different severities of brain injury (i.e., mild, severe, and no-TBI) and crimes (i.e., murder or assault). The study determined that the crimes committed by the defendant with TBI were more likely to receive some form of punishment compared to the defendant without a TBI. Rehabilitation, however, was rated most appropriate form of punishment for crimes committed by defendants with severe TBI; whereas, incarceration was rated the most appropriate form of punishment for crimes committed by defendants without a TBI. Although these findings do not accord with the notion that individuals with TBI are more likely to be incarcerated, the results do indicate that the mock jurors considered the defendant's history of brain injury when determining the appropriate punishment for the hypothetical crime.

STATEMENT OF THE PROBLEM

The current study was designed to investigate whether the level of knowledge and awareness about brain injury influenced legal judgments in cases where the defendant has sustained a TBI. Using a similar paradigm as St. Pierre and Parente (2016), the current study assessed whether having a more comprehensive education with respect to the consequences of TBI would affect participants' perception of the morality, guilt and punishment of the crime. Based on the findings discovered by St. Pierre and Parente (2016), the current study hypothesized that 1) participants would perceive the crime committed by the defendant with severe TBI as morally justifiable, less guilty, and deserving of milder sentencing than the defendants with mild or no TBI; 2) participants who read the brochure about brain injury would perceive the defendant as morally justifiable, less guilty, and deserving of milder sentencing than those mock jurors who read the brochure about jury duty; 3) participants who read the brochure about brain injury would perceive the crime committed by

the defendant with severe TBI as morally justifiable, less guilty, and deserving of milder sentencing than the defendants with mild or no TBI.

METHODS

Materials

Mock Trial Transcript. Participants read a five-page mock trial transcript describing the facts about a fictional crime that occurred. The transcript portrayed a fictional character, Jason Horton, on trial for the crime of voluntary manslaughter, against victim William Hayes. The fictional characters, Detective Ronald Simon and Doctor Jaden Richard served as the expert witnesses for the case and represented the prosecution and defense, respectively. A summary of the trial is presented to participants prior to reading the actual transcript. This summary is stated below:

On August 5, 2014, around 11:30pm, Detective Simon called 911 to report a murder he witnessed while patrolling his usual route of 57th street. Detective Simon witnessed Jason Horton stabbing William Hayes after the two men collided into each other at the intersection of 57th street's alleyway. The unexpected collision startled the two men, specifically Jason Horton, who as Detective Simon stated, reflexively pulled out his pocketknife and stabbed William Hayes in the abdomen.

The trial script reveals the facts of the case. The prosecution presented Detective Simon's eyewitness testimony of the events that occurred the night of August 5, 2014. The defense presented Dr. Richard's expert witness testimony about the medical evaluation he performed on Jason Horton, and its possible influence on Mr. Horton's behaviors.

Jason Horton is being accused of voluntary manslaughter, meaning that Mr. Horton did not have prior intent to kill William Hayes, and behaved due to "the heat of passion", under circumstances that would cause a reasonable person to become emotionally or mentally disturbed.

On the basis of the evidence, the defense intends to prove Jason Horton should not be held responsible for the death of William Hayes.

There were three different versions of the transcript created to manipulate the expert witness, Dr. Jaden Richard's, testimony about the defendant's brain injury (i.e., severe TBI, mild TBI, and no TBI). The Brain Injury Association website (2015) provided the information that was used to create the descriptions about the severe and mild TBIs. For the severe TBI version, Dr. Richard testified that the defendant experienced a severe brain injury from a motor vehicle accident two years ago, and that the defendant continued to suffer from post-injury symptoms. Similarly, for the mild TBI version, the defendant was described as experiencing a mild brain injury from a motor vehicle accident two years ago, and continued to suffer from the mild post-injury symptoms. In the no TBI version, Dr. Richard stated that the defendant did not have any past medical surgeries or health complications.

Brochures. Educational brochures were used to assess whether the participants' perceptions of the defendant changed based on the newly acquired information regarding traumatic brain injuries, as well as the post-injury cognitive, emotional and behavioral consequences. The brochure was extracted from The Brain Injury Guide and Resources website (MU School of Health Professions, Department of Health Psychology, 2012), which discussed how a TBI can cause an individual to experience post-injury deficits that may have not been acquired if the individual did not sustain the injury. This website was created by the University of Missouri's School of Health Professionals for caregivers, parents, and individuals with a brain injury who seek information on how to cope with and understand TBI.

The brochure about jury duty was used for control purposes. This brochure informed the readers about jury duty and what to expect if they were to serve on a jury. This brochure was taken directly from the Maryland Judiciary jury resources website (Maryland Judiciary, 2017) that is available to persons inquiring information about jury services.

Participants

Two hundred and four undergraduate students from a mid-Atlantic university participated in the study. Participants were informed that the purpose of the study was to assess perceptions morality, guilt, and sentencing of defendants with brain injury. Only those at least 18 years of age were able to participate in the study, and extra credit was given to those students who volunteered to participate. The study was approved by the university's IRB committee.

Of the 204 participants, there were 169 (82.8%) female participants, 29 (14.2%) male participants, and 6 (3.0%) participants who chose not to answer. One-hundred and thirty-one (64.2%) self-identified as Caucasian, forty-five (22.1%) as African-American, ten (4.9%) as Latino, five (2.5%) as Asian-American, one (0.5%) as Native American, five (2.5%) as "other", and seven (3.3%) chose not to answer. Ages ranged from 18 to 56 ($M = 21.13$, $SD = 3.56$).

Procedure

One hundred and three participants (50.5%) were randomly assigned to the control group and read the brochure about jury duty, while one hundred and one participants (49.5%) were randomly assigned to read the brochure about brain injury. Participants were instructed to read the brochure for ten minutes.

After ten minutes, participants were randomly assigned to read one of the three versions of the mock trial transcript. Sixty-nine participants (33.8%) read about a defendant with severe TBI on trial, seventy-one participants (34.8%) read about a defendant with mild TBI on trial, and sixty-four participants (31.4%) read about a defendant with no TBI on trial. After reading the assigned mock trial transcript, participants then completed a questionnaire that was created by St. Pierre and Parente (2016), which assessed 1) the morality of the crime, 2) the guilt of the crime, and 2) the most appropriate form of punishment. Participants were also instructed that they could reference their brochure when reading the transcript and completing the questionnaire.

Manipulation check. Participants first answered the question, “What crime was allegedly committed by the defendant?” Participants were prompted to write an open-ended response. The anticipated response should have indicated that the defendant was on trial for voluntary manslaughter. None of the 204 participants failed this manipulation check.

Morality. Participants then answered three questions using 7-pt scales (1- *not at all* to 7- *extremely*) that assessed the morality of the defendant’s behaviors as a result of the crime. The first question asked, “How ethical were the defendant’s behaviors that night?” The second question asked, “How morally acceptable was the defendant’s behaviors that night?”; and the third question asked, “How morally justifiable were the defendant’s behaviors that night?”.

Level of guilt. Participants then answered three questions using 7-pt scales (1- *not at all* to 7- *extremely*) that assessed the defendant’s level of guilt. The first question asked, “How at fault is the defendant of committing the crime?” The second question asked, “How liable is the defendant of committing the crime?” The third question asked, “How guilty is the defendant of committing the crime?”

Punishment. Participants then answered five questions that assessed the most appropriate form of punishment if the defendant was convicted of the crime. Using a 7-pt scale (1- *not at all* to 7- *extremely*), the first question asked, “How punishable are the defendant’s behaviors?” The next four questions used a 7-pt scale (1- *not appropriate* to 7- *extremely appropriate*). Participants were asked, 1) “If convicted, how appropriated would rehabilitation be;” 2) “If convicted, how appropriated would community service be;” 3) “If convicted, how appropriate would a jail sentence be;” and 4) “If convicted, how appropriate would a prison sentence be?”

RESULTS

Morality Index

The three morality subscales (morally acceptable, morally ethical, and morally justifiable) produced a significant Cronbach alpha ($\alpha = .80$) and were therefore averaged to create a single index.

A univariate analysis of variance (ANOVA) on the morality index revealed non-significant main effects [TBI: $F(2, 198) = 2.33, p = 0.10$; brochure: $F(1, 198) = 2.11, p = 0.15$] and a non-significant interaction [$F(2, 198) = 0.80, p = 0.45$] between the severity of TBI and type of brochure.

Guilt Index

The three questions measuring level of guilt (at fault, liable, and guilty) were highly reliable ($\alpha = 0.84$). Thus, the three measures were averaged into a single index. A univariate ANOVA on the guilt index revealed a significant main effect for the severity of TBI, $F(2, 198) = 15.52, p < .001$ (Figure 1). Overall, participants perceived the defendant with severe TBI to be least guilty of the crime ($M = 4.87, SE = 0.15$) compared to the defendant with mild TBI ($M = 5.30, SE = 0.15$) and no TBI ($M = 6.04, SE = 0.15$).

For type of brochure, a univariate ANOVA revealed a significant main effect, $F(1, 198) = 4.76, p < .05$ (Figure 2). Overall, participants who read the brochure about brain injury rated the defendant as being less guilty of the crime ($M = 5.22, SE = 0.12$) compared to those participants who read the brochure about jury duty ($M = 5.59, SE = 0.12$). There was no significant interaction between severity of TBI and type of brochure.

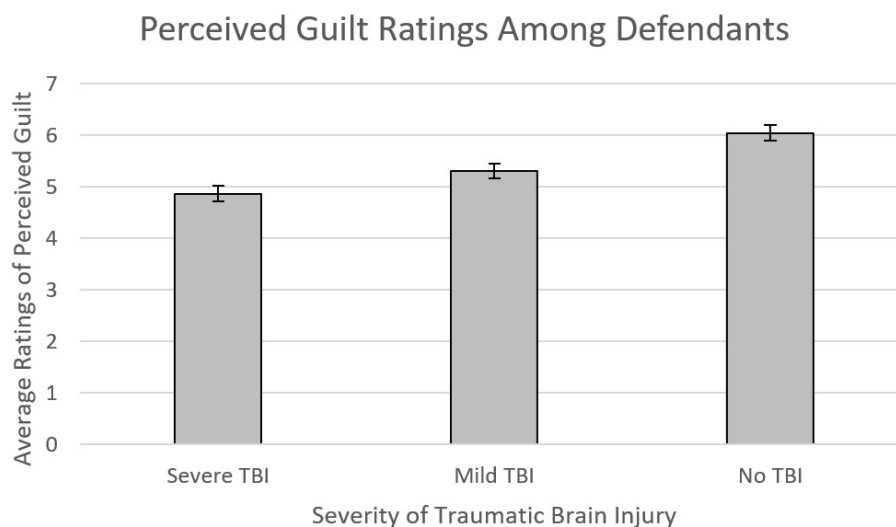


Figure 1. Main effect of severity of TBI on the perception of guilt. The defendant with severe TBI was perceived as least guilty for the crime; whereas the defendant with no TBI was perceived as most guilty of the crime.

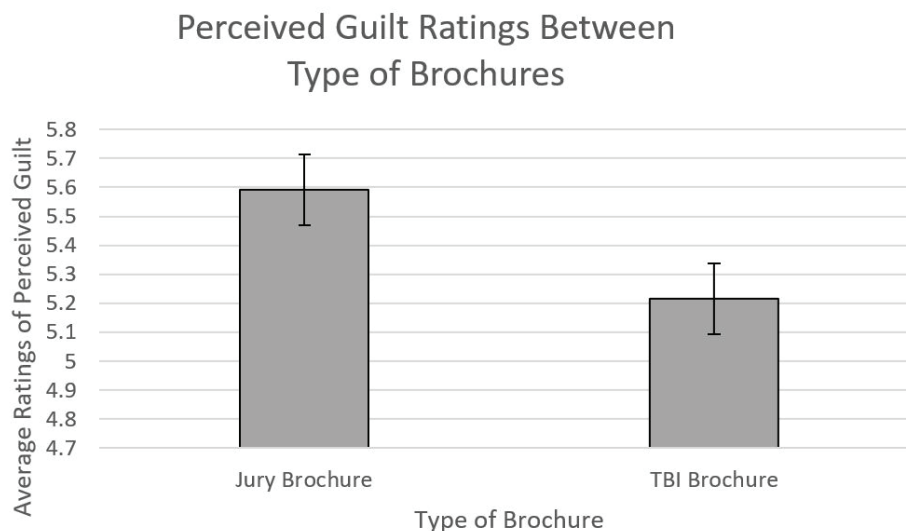


Figure 2. Main effect of brochure type on the perception of guilt. Participants who read the brochure about jury duty perceived the defendant as more guilty of committing the crime than the participants who read the brochure about brain injury.

Punishment Index

There were four separate questions that asked if the defendant is convicted, would jail, prison, community service, or rehabilitation be the most appropriate form of punishment. The synonymous terms, jail and prison were highly correlated ($r = .90$), and averaged into an incarceration index.

A univariate ANOVA revealed a significant main effect for the TBI condition, $F(2, 198) = 12.87, p < .001$ (Figure 3). The defendant with severe TBI was perceived as least punishable for the crime of voluntary manslaughter ($M = 4.68, SE = 0.16$) than the defendant with mild TBI ($M = 5.15, SE = 0.15$) and no TBI ($M = 5.84, SE = 0.17$). There was no significant main effect for type of brochure or a significant interaction between severity of TBI and type of brochure.

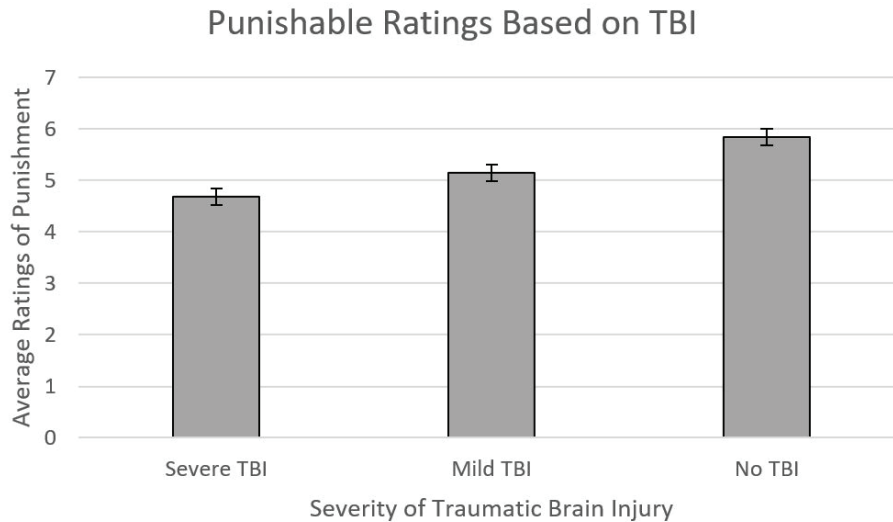


Figure 3. Main effect of severity of TBI on the perception of punishment. The defendant with severe TBI was perceived as least punishable; whereas the defendant with no TBI was perceived as most punishable.

Most appropriate form of punishment analysis. A multivariate ANOVA revealed a main effect for type of brochure, $F(1, 197) = 8.36, p < 0.005$ (Figure 4). Participants who read the jury duty brochure indicated that incarceration was the most appropriate form of punishment for the defendant, in general, ($M = 4.90, SE = 0.15$) relative to the participants who read the brochure about brain injury ($M = 4.27, SE = 0.16$).

For severity of TBI, there was a main effect for rehabilitation, $F(2, 197) = 15.94, p < 0.001$ and incarceration, $F(2, 197) = 16.99, p < 0.001$ (Figure 5). There was no significant main effect for the punishment of community service. Participants rated the defendant with severe TBI to be most deserving of a rehabilitation sentence ($M = 5.97, SE = 0.21$) compared to the defendant with mild TBI ($M = 5.31, SE = 0.21$) and no TBI ($M = 4.30, SE =$

0.22). Inversely, the defendant with no TBI was most deserving of incarceration ($M = 5.38$, $SE = 0.20$) than the defendant with mild TBI ($M = 4.59$, $SE = .19$) and severe TBI ($M = 3.80$, $SE = 0.19$).

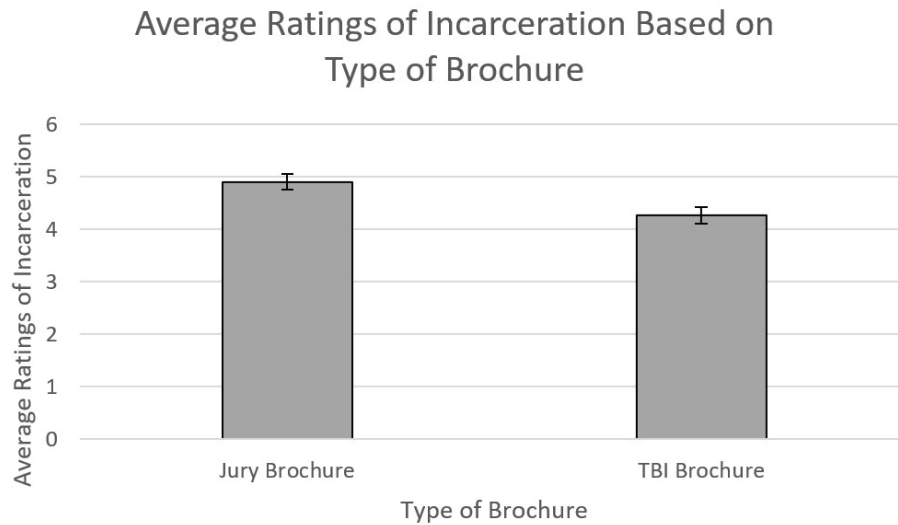


Figure 4. Main effect of brochure type on average ratings of incarceration as being the most appropriate form of punishment. Participants who read the jury brochure perceived incarceration as being the most appropriate form of punishment than the participants who read the brochure about brain injury.

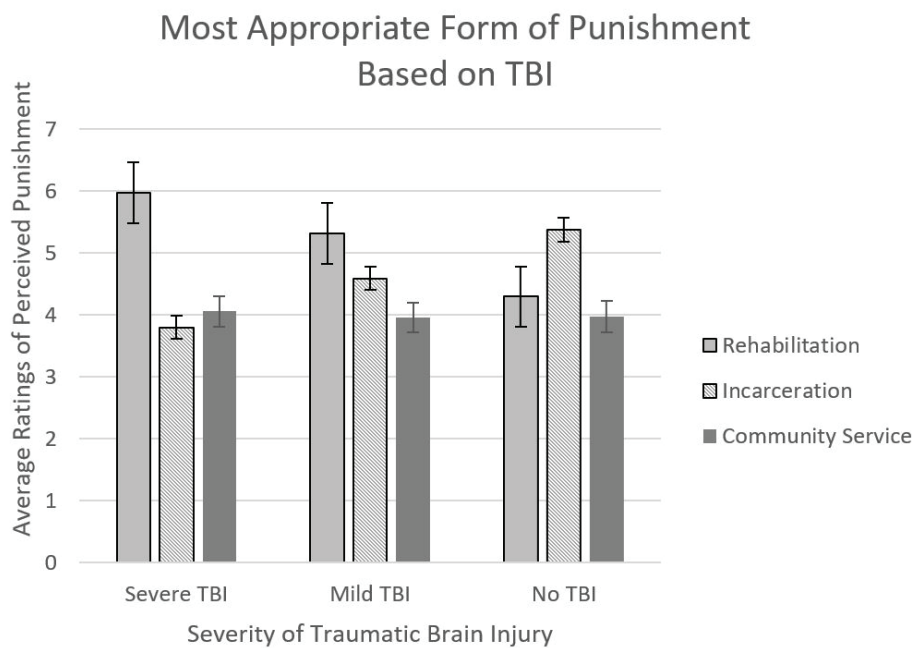


Figure 5. Main effects of severity of TBI on the most appropriate form of punishment. Rehabilitation was considered the most appropriate form of punishment for the defendant with severe TBI compared to the defendants with mild and no TBI. Incarceration was

considered the most appropriate form of punishment for the defendant with no TBI compared to the defendants with mild and severe TBI.

DISCUSSION

The purpose of the current study was to investigate whether additional education about brain injuries and post-injury consequences influenced the perception of morality, guilt and sentencing of defendants with brain injuries. Using the informational brochure about brain injury as an educational tool elicited lower ratings of perceived guilt and lower ratings of incarceration for the defendants, in general. Compared to reading the brochure about jury duty, when reading the brochure about brain injury, participants found the defendant less guilty of the crime and thought that incarceration was a less appropriate form of punishment for the defendant. Therefore, the brochure about brain injury educated the participants about the post-injury cognitive, emotional, and behavioral consequences that the defendant may have experienced, thus influencing the perception of guilt and sentencing for the defendant.

Based on the severity of brain injury, our results suggest that the participants considered the brain injury when deciding the perceived guilt and punishment of a crime. Consistent with the results reported by St. Pierre and Parente (2016), the current study found that the participants perceived the defendant with severe TBI to be less guilty of the crime, voluntary manslaughter, and most deserving of a milder form of punishment, such as rehabilitation, relative to defendant with mild TBI and the defendant with no TBI. In addition to replicating the results found by St Pierre and Parente (2016), the current study considered whether educating the participants about brain injuries could influence their perceptions of the defendant. This was an important addition to the previous study by St. Pierre and Parente (2016), due to the surplus of misconceptions regarding brain injuries that bias public perceptions (Bradford, 2013; Gouvier, Prestholdt, & Warner, 1988; Ralph & Derbyshire, 2013; Springer, Farmer & Bouman, 1997).

General Discussion

Morality. There were no significant differences found for the morality measure. Though there are disparities between the results from St. Pierre and Parente (2016) and the current study, one thing that is consistent between these studies is that the crimes, described in both studies, were considered immoral behaviors in some degree. This finding supports the notion that criminality is a multidimensional concept that entails harm to society, personal harm experienced by victims, and the potential consequences for the offender (Ramchand, MacDonald, Haviland & Morral, 2008). Despite the defendant's history of brain injury, the crime of voluntary manslaughter was still considered an immoral behavior by the participants. However, the novelty of the current study refers to the discrepancies of guilt and sentencing that were perceived.

Guilt. When presented with the brochure about brain injury and the post-injury behavioral, cognitive, and emotional consequences, the participants perceived the defendant as being less guilty of the crime when compared to those who read the brochure about jury duty. Even though the crime was identical for all defendants, the existence of a brain injury

appeared to influence the jurors' perceptions of guilt. These results suggest that if the defendant suffers from a TBI, the more the jury is informed about brain injuries and the post-injury consequences during the trial, the less likely they are to find the defendant culpable.

Punishment. Similar to the results found in St. Pierre and Parente (2016), the most appropriate form of punishment for the defendants with either severe or mild TBI was rehabilitation. Conversely, the most appropriate form of punishment for the defendant with no TBI was incarceration. When presented with the brochure about jury duty, the participants indicated that incarceration was the most appropriate form of punishment for the defendant, in general. More importantly, when the participants read the brochure about brain injury, incarceration was perceived to be the least appropriate form of punishment for the defendant. These results suggest that presenting additional education about brain injuries showed a higher level of understanding in regards to the post-injury consequences, which was shown to be taken into consideration when determining the defendant's punishment.

CONCLUSIONS

Considered an "invisible disability", brain injury symptoms are not immediately observed by the public eye. Dissimilar to a broken bone, individuals with a brain injury typically do not show their deficits because the consequences of a brain injury affects an individual's cognition, personality, and behavior (Brower & Price, 2001; Chapman & Hudson, 2010; Lane et al., 2017; St. Pierre & Parente, 2016). With a broken bone, the cast or sling signifies that the individual may have experienced a painful event that resulted in the immobility of their limb, as well as the temporary disability of some sort (e.g., inability to drive). With a brain injury, on the surface, the individual may show bruises or scrapes on the head; however, the neurological deficits, such as the inability to modify behaviors, increased impulsivity and irritability, and impairments in attention, memory, and planning often go unseen (Brower & Price, 2001; Lane et al., 2017; Ralph & Derbyshire, 2013). Otherwise, if these neurological deficits are observed, they are often misunderstood by the public, perpetuating the cycle of misconceptions and stigma towards individuals with brain injuries (Bradford, 2013; Gouvier & Warner, 1988; Springer et al., 1997). Post-injury symptom such as disinhibition, increased aggression, and the inability to modify behaviors may now inaccurately be perceived as innate personality flaws, rather than neurological deficits, leading to misconstrued perceptions of individuals with brain injuries (Lane et al, 2017).

However, the current study successfully revealed that when laypersons are provided additional education about the neurological, behavioral, and cognitive consequences of a brain injury, they tend to be more considerate to the fact that brain injuries may have exacerbated the crime that was committed. This additional education about brain injuries eases the stigma and misconceptions believed by laypersons; consequently, the defendant is viewed, not as a violent or uncontrollable criminal, but as a person suffering from a brain injury in need of rehabilitation.

One of the main limitations in the current study is the presentation of the informational brochure. In a real courtroom, it is highly unlikely that the defense attorney provides a teaching lecture or handout to educate the jury on matters of the case. Defense attorneys typically rely on the testimony of an expert witness, such as a medical doctor or psychiatrist to inform the jury about the defendant's medical condition. Though the current study included testimonies from authentic sources (i.e., medical doctor and detective), the presentation of the informational brochure is an unlikely tool that a prosecutor or defense attorney would use in their presentation of evidence. However, the current study was not intended to provide feedback to attorneys on how to present evidence to the jury. The main objective of the current study was to determine whether the lack of awareness and knowledge about brain injuries and the post-injury neurological deficits influences the perceptions about individuals with a brain injury. The reason the brochures were provided was to investigate whether a brief 10-minute education about brain injuries affected the way individuals perceived a person with a brain injury; and the results showed that those who read the brochure about brain injuries had a positive, empathetic response towards the defendant. The participants who read the brochure about brain injury perceived the defendant who was on trial for voluntary manslaughter as less guilty and most deserving of the rehabilitation sentence compared to those participants who read the brochure about jury duty. The question now becomes, if a brief 10-minute read had an effect on individuals' perceptions of guilt and sentencing, how would the testimonies of expert witnesses who specialize in neuropsychology effect the perceptions of the jury? Thus, the results suggest that defense attorneys should provide the jury with extensive information about mental disorders and the neurological deficits that may otherwise be ignored, in order to assure that the most appropriate verdict is determined.

REFERENCES

- Barnfield, T. V., & Leathem, J. M. (1998). Incidence and outcomes of traumatic brain injury and substance abuse in a New Zealand prison population. *Brain Injury, 12*(6), 455-466.
- Bradford, L. S. (2015). Misconceptions about traumatic brain injury among U.S. Army behavioral health professionals. *Rehabilitation Psychology, 60*(4), 344-352. doi:10.1037/rep0000057
- Brain Injury Association of America. (2015). About Brain Injury. Retrieved April 26, 2017, from <http://www.biausa.org/about-brain-injury.htm>
- Brower, M. C., & Price, B. H. (2001). Neuropsychiatry of frontal lobe dysfunction in violent and criminal behaviour: A critical review. *Journal of Neurology, Neurosurgery & Psychiatry, 71*(6), 720-726.
- Chapman, R. G., & Hudson, J. M. (2010). Beliefs about brain injury in Britain. *Brain Injury, 24*(6), 797-801. doi:10.3109/02699051003709607
- Colantonio, A. A., Stamenova, V. V., Abramowitz, C. C., Clarke, D. D., & Christensen, B. B. (2007). Brain injury in a forensic psychiatry population. *Brain Injury, 21*(13-14), 1353-1360.
- Daftary-Kapur, T., Dumas, R., & Penrod, S. D. (2010). Jury decision-making biases and methods to counter them. *Legal and Criminological Psychology, 15*(1), 133-154.
- Damasio A.R., Tranel D., & Damasio H. (1990). *Individuals with sociopathic behavior caused by frontal damage fail to respond autonomically to social stimuli. Behavioral Brain Research, 41*, 81-94.
- Davies, R.C., Williams, W. H., Hinder, D., Burgess, C. N., & Mounce, L.T. (2012). Self-reported traumatic brain injury and postconcussion symptoms in incarcerated youth. *Journal of Head Trauma Rehabilitation, 27*(3):E21-7. doi: 10.1097/HTR.0b013e31825360da

- Elwork, A., Sales, B. D., & Alfini, J. J. (1977). Juridic decisions: In ignorance of the law or in light of it? *Law and Human Behavior*, 1(2), 163-189. doi:10.1007/BF01053437
- Farrer, T. J., & Hedges, D. W. (2011). Prevalence of traumatic brain injury in incarcerated groups compared to the general population: A meta-analysis. *Progress in Neuro-Psychopharmacology & Biological Psychiatry*, 35(2), 390-394. doi:10.1016/j.pnpbp.2011.01.007
- Gouvier, W. D., Prestholdt, P. H., & Warner, M. S. (1988). A survey of common misconceptions about head injury and recovery. *Archives of Clinical Neuropsychology*, 3(4), 331-343. doi:10.1016/0887-6177(88)90046-7
- Hughes, N., Williams, W. H., Chitsabesan, P., Walesby, R.C., Mounce, L. T., & Clasby, B. (2015). The prevalence of traumatic brain injury among young offenders in custody: a systematic review. *Journal of Head Trauma Rehabilitation*, 30(2), 94-105. doi: 10.1097/HTR.0000000000000124
- Injury Prevention & Control: Traumatic Brain Injury. (2014, March 6). *Centers for Disease Control and Prevention*. Retrieved October 27, 2014, from <http://www.cdc.gov/TraumaticBrainInjury/>.
- Lane, K. S., St. Pierre, M. E., Lauterbach, M. D. and Koliatsos, V. E. (2016). Patient profiles of criminal behavior in the context of traumatic brain injury. *Journal of Forensic Sciences*. doi:10.1111/1556-4029.13289
- Maryland Judiciary. (2017). Jury Service. Retrieved April 17, 2017, from <http://mdcourts.gov/juryservice/jurorresources.html>
- MU School of Health Professions, Department of Health Psychology. (2012). Traumatic Brain Injury Basics. Retrieved April 17, 2017, from <http://braininjuryeducation.org/>
- Perkes, I., Schofield, P. W., Butler, T., & Hollis, S. J. (2011). Traumatic brain injury rates and sequelae: A comparison of prisoners with a matched community sample in Australia. *Brain Injury*, 25(2), 131-141.
- Ralph, A., & Derbyshire, C. (2013). Survivors of brain injury through the eyes of the public: A systematic review. *Brain Injury*, 27(13-14), 1475-1491. doi:10.3109/02699052.2013.823653
- Ramchand, R., MacDonald, J. M., Haviland, A., & Morral, A. R. (2009). A developmental approach for measuring the severity of crimes. *Journal of Quantitative Criminology*, 25(2), 129-153. doi:10.1007/s10940-008-9061-7
- Sarapata, M., Herrmann, D., Johnson, T., & Aycock, R. (1998). The role of head injury in cognitive functioning, emotional adjustment and criminal behaviour. *Brain Injury*, 12(10), 821-842.
- Shiroma, E. J., Ferguson, P. L., & Pickelsimer, E. E. (2010). Prevalence of traumatic brain injury in an offender population: A meta-analysis. *Journal of Correctional Health Care*, 16(2), 147-159. doi:10.1177/1078345809356538
- Springer, J. A., Farmer, J. E., & Bouman, D. E. (1997). Common misconceptions about traumatic brain injury among family members of rehabilitation patients. *The Journal of Head Trauma Rehabilitation*, 12(3), 41-50. doi:10.1097/00001199-199706000-00005
- St. Pierre, M.E., & Parente, R. (2016). Efficacy of legal judgments for defendants with traumatic brain injury. *NeuroRehabilitation*, 39 1, 125-34.
- Tateno, A., Jorge, R. E., & Robinson, R. G. (2003). Clinical correlates of aggressive behavior after traumatic brain injury. *The Journal of Neuropsychiatry and Clinical Neurosciences*, 15(2), 155-160.
- Turkstra, L. L., Jones, D. D., & Toler, H. L. (2003). Brain injury and violent crime. *Brain Injury*, 17(1), 39.

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