

2021

Correlations of Head Injuries in Criminal Offenders of Sex Crimes Against Children

Emily D. Rohlf
University of Central Florida

 Part of the [Psychology Commons](#)

Find similar works at: <https://stars.library.ucf.edu/honorsthesis>

University of Central Florida Libraries <http://library.ucf.edu>

This Open Access is brought to you for free and open access by the UCF Theses and Dissertations at STARS. It has been accepted for inclusion in Honors Undergraduate Theses by an authorized administrator of STARS. For more information, please contact STARS@ucf.edu.

Recommended Citation

Rohlf, Emily D., "Correlations of Head Injuries in Criminal Offenders of Sex Crimes Against Children" (2021). *Honors Undergraduate Theses*. 1078.
<https://stars.library.ucf.edu/honorsthesis/1078>



CORRELATIONS OF HEAD INJURIES IN CRIMINAL OFFENDERS OF SEX CRIMES AGAINST CHILDREN

by

EMILY ROHLF

A thesis submitted in partial fulfillment of the requirements
for the Honors in the Major Program in Psychology
in the College of Sciences
and in the Burnett Honors College
at the University of Central Florida
Orlando, Florida

Fall Term, 2021

Thesis Chair: W. Steven Saunders, Psy.D.

ABSTRACT

In this research study, the correlation and significance of head injuries in adult sex offenders that have committed crimes against children were measured and compared to a group of criminal offenders that have committed non-sex-related criminal offenses. Data on 30 randomly selected individuals from each of the two groups (60 individuals total) were collected to measure and compare the number of individuals with a head injury in each group. The purpose of this research was to gain a better understanding of why criminally deviant behaviors occur in adults. This research also hoped to encourage further research on this topic or similar topics that can lead to new ideas in prevention, intervention, and treatment plans for sex offenders.

DEDICATION

To my biggest support system and best friend, Alex.

ACKNOWLEDGEMENTS

I cannot express enough gratitude to my thesis chairperson, Dr. Saunders, and my wonderful committee member, Dr. Winton. This research would not have been possible without your support and guidance throughout this process. Thank you for believing in me and for believing in this project. I would also like to say thank you to Dr. Chin for helping with the chi-square test analysis in this research.

TABLE OF CONTENTS

| | |
|---------------------------|-----|
| LIST OF TABLES | vi |
| INTRODUCTION | vii |
| BACKGROUND | 1 |
| METHODS | 5 |
| <i>Participants</i> | 5 |
| RESULTS | 7 |
| DISCUSSION | 13 |
| CONCLUSION..... | 16 |
| REFERENCES | 17 |

LIST OF TABLES

| | |
|---|----|
| Table 1: Information Gathered on Group 1 | 7 |
| Table 2: Information Gathered on Group 2 | 9 |
| Table 3: Criminal Offense Head Injury Crosstabulation | 14 |
| Table 4: Chi-Square Test | 14 |

INTRODUCTION

The purpose of this paper was to explore the correlation and possible causation of an adult person's status as a sex offender that has committed crimes against children and their previous history of traumatic brain injuries. This research also explored the question of whether a head injury can cause pedophilic sexual feelings and/or pedophilic disorder and consequently cause the person to commit a sex crime against a juvenile. It was also investigated whether there was an occurrence of more TBIs in adults who have committed sex crimes against children rather than adults who have been convicted of non-sex crimes.

The primary hypothesis for this research question was that adults that have committed a sex crime against a child or children will have a higher occurrence of previous traumatic brain injuries than adults who have committed non-sexual crimes. This hypothesis was imposed due to the neurological information known on persons with a pedophilic disorder, as noted in the *Background*.

From the collection of data on these two groups of criminal sex and non-sex offenders, researchers and clinical professionals can gain a better understanding as to why criminally deviant behaviors occur in adults and how to prevent these dangerous behaviors from occurring. This paper also hoped to encourage more research to be done on topics such as these that can lead to new ideas in intervention, prevention, and treatment plans for sex offenders.

BACKGROUND

Traumatic brain injuries (TBIs) commonly are caused by “a violent blow or jolt to the head or body” (Mayo Clinic, 2021). TBIs that are classified as “mild” can alter your brain non-permanently, but more severe TBIs can cause “bruising, torn tissues, bleeding and other physical damage to the brain” (Mayo Clinic, 2021).

Depending on the severity and location of the head injury on the brain, it can cause lasting and potentially irreversible changes in a person’s personality and behavior (Mayo Clinic, 2021). Impairments to the frontal lobe and temporal lobe of the brain; for example, are responsible for many brain disorders that cause changes in a person’s judgment, impulse control, and decision-making capabilities (Suchy, et al, 2009). These lobes are also vital for the initiation and activation of sexual behaviors (Fabian, 2012). The hippocampus, the amygdala, septal complex, hypothalamus, brainstem, and spinal cord are also believed to be some of the most crucial areas of the brain that are responsible for the adaptation of sexual behavior (Fabian, 2012).

Some researchers have found a positive correlation between damage to these areas of the brain and certain mental disorders including pedophilic disorder (Focquaert & Gilbert, 2015).

Individuals that are classified as having a pedophilic disorder, as recognized by the Diagnostic and Statistical Manual of Mental Disorders V, have often been found to have abnormalities or damage to their frontal lobe and other brain regions (American Psychiatric Association, 2017). The Diagnostic and Statistical Manual of Mental Disorders, commonly referred to as the DSM-5, serves as a “classification of mental disorders with associated

criteria” for medical professionals, students, and researchers (American Psychiatric Association, 2017).

The DSM-5 describes pedophilic disorder as any person meeting the following criteria:

- Over a period of at least 6 months, recurrent intense sexually arousing fantasies, sexual urges, or behaviors involving sexual activity with a prepubescent child or children (Generally, age 13 years or younger)
- The individual has acted on these sexual urges, or the sexual urges or fantasies cause marked distress or interpersonal difficulty
- The individual is at least age 16 years and at least 5 years older than the child or children in Criterion A

A person exhibiting solely one or even two of these characteristics but not all three may be described as someone with a pedophilic sexual orientation rather than a pedophilic disorder (American Psychiatric Association, 2017). In further explanation, a person who does not feel remorse or shame about their attraction toward children and has never acted on any impulsiveness they have regarding this attraction, cannot be diagnosed as someone having a pedophilic disorder. This does, however, fall under the category of having a pedophilic sexual orientation (American Psychiatric Association, 2017).

There are two known different types of pedophilic disorder: developmental pedophilic disorder and acquired pedophilic disorder. Developmental pedophilia, which as far as

psychologists and medical professionals know, is the more prominent type of pedophilic disorder. Developmental pedophilia is when the adult has “always” had a sexual preference for children and it has always been known to the offender. As stated by the DSM-5, developmental pedophilia is believed to be caused by complications in utero for the mother where the unborn child’s brain did not develop correctly (American Psychiatric Association, 2017).

Acquired pedophilia; however, is the newly “acquired” sexual preference for children that the sex offender states were not there previously (American Psychiatric Association, 2017). Some cases of acquired pedophilia showed that damage to certain parts of the brain caused by either the formation of new tumors or a traumatic brain injury can cause this new sexual preference for children in men and women who state that they did not possess these urges/preferences previously (Scarpazza, et al, 2021). People who have acquired pedophilia often also exhibit a change of personality and a decline in impulse control (Focquaert & Gilbert, 2015).

Since the focus of this research is on traumatic brain injuries in sex offenders that have committed sex crimes against children, the study will be majority focused on adults that fall into the acquired pedophilic disorder category, if they indeed possess pedophilic disorder. Some sex offenders that committed crimes against children do not meet all three criteria for having pedophilic disorder as described by the DSM-5 but may meet one or two of the criteria. Therefore, they would have a “pedophilic sexual orientation” rather than a mental disorder (American Psychiatric Association, 2017).

It is possible that adults that have committed a sex crime against a child may not possess any of the other above criteria of pedophilic disorder as described in the DSM-5 and would therefore be rejected a pedophilic disorder diagnosis. One example of this could be a 21-year-old committing statutory rape against a 16-year-old. The offender may or may not have a pedophilic disorder, but it cannot be assumed that the offender has pedophilic disorder solely because that individual has committed a sex crime against a child (American Psychiatric Association, 2017).

As stated by Dr. Mark Winton and Dr. Barbara A. Mara, sex offenders make up a “diverse” population of people (Winton & Mara, 2013). Sex offenders that commit sex crimes against children can be adult or juvenile, male, or female, with the predominance of sex crimes committed by adult males (Vandive & Walker, 2002).

Though definitions of sexual offenses against children may differ per region and per state, North Carolina defines child sexual abuse as two different types: touching and non-touching (*Child sexual abuse definition & facts: Prevent child abuse NC 2021*). The first type of child sex abuse involves physical interaction of the child including “touching a child’s genitals, making a child touch someone else’s genitals, playing sexual games, and/or putting objects” in children’s orifices (*Child sexual abuse definition & facts: Prevent child abuse NC 2021*). The second type of child sex abuse involves non-touching physical interaction with a child including showing the child pornography, “exposing a person’s genitals to a child, prostituting/trafficking a child, photographing a child in sexual poses, encouraging a child to watch or hear sexual acts either in person or on video, and/or watching a child undress or use the bathroom (*Child sexual abuse definition & facts: Prevent child abuse NC 2021*).

METHODS

Participants

Information and data collection on juvenile sex offenders will be excluded from this research for the purpose of specification and classification of the subset of adult sex offenders that are being investigated. Only information on adult sex offenders that are either male or female that have committed a sex crime against a child or children will be evaluated and discussed in this paper.

Participants in this study included 55 males and 5 females all within the age ranges of 18 to 76 years old that have been evaluated by a licensed psychologist that has practiced since 1998. Of the 60 participants in total, two groups of 30 participants are made using the following criteria:

Group 1: Adults sex offenders who have committed sex crimes against children

Group 2: Adults who have committed non-sex crimes

Procedure

The Clerk of the Circuit Court and Comptroller website was used to collect information on 30 sex offenders that have committed sex crimes against children and 30 criminal offenders that have committed non-sex-related crimes in Central Florida. Information that was collected included a history of head injury or head injuries, which may include the location of trauma, type of trauma, whether loss of consciousness resulted, and/or any changes in behavior or personality

noted by the person or caretaker. Other information that was collected from the participants included gender, age, race, highest education level, marital status, and history of mental disorder(s), and a random numerical code in replacement as each subject's personal identifier. The information collected was organized in two separate tables according to which category the criminal offender was placed into.

All the information that was used in this study is public record and is accessible through the Clerk of the Circuit Court and Comptroller website without login or passcode. To protect the confidentiality and privacy of each participant, any personal identifying information on this website such as the participants' name, birthday, or other indicators that would allow their privacy or identity to be compromised was not included in this research study. Solely, the researcher and researcher's advisor possess each of the subjects' personal identification information.

RESULTS

Table 1: Information Gathered on Group 1

| Subject | Gender | Age | Race | Highest Education Completed | Marital Status | History of Head Injury/Injuries | History of Mental Disorder(s) |
|---------|--------|-----|--------------------------|--|------------------------|---|---|
| 102309 | Male | 57 | Caucasian (non-Hispanic) | AA Degree | Single | Lacerated brainstem from automobile accident; blow to the head from an inmate | PTSD (from driving), Depression, considered for antisocial personality disorder |
| 142516 | Male | 55 | Black | Some college | Single | None | Antisocial personality disorder |
| 112020 | Male | 23 | Caucasian (non-Hispanic) | 9th grade | Single | None | ADHD, Dyslexia, Bipolar Disorder |
| 172320 | Male | 18 | Caucasian (non-Hispanic) | 11th grade | Single | None | None |
| 111119 | Male | 38 | Caucasian (non-Hispanic) | GED | Single | None | None |
| 181920 | Male | 52 | Black | Some college | Married | None | None |
| 140212 | Male | 42 | Caucasian (non-Hispanic) | Some college | Married | None | ADHD, Bipolar Disorder |
| 130410 | Male | 33 | Caucasian (non-Hispanic) | High school | Married | None | Dyslexia, drug, and alcohol abuse |
| 110415 | Male | 36 | Caucasian (Hispanic) | High school | Separated/Divorced | None | None |
| 111119 | Male | 21 | Caucasian (non-Hispanic) | High school | Single | None | None |
| 122912 | Male | 45 | Caucasian (non-Hispanic) | High school (though has a third grade reading level) | Widowed/divorced twice | None | Dyslexia, Bipolar disorder, suicidal ideations/4 attempts |
| 190520 | Male | 30 | Caucasian (non-Hispanic) | High school | Married | Blow to the head that required stitches | PTSD symptoms |

| | | | | | | | |
|--------|--------|----|--------------------------|-------------------------------------|------------------------------|--|--|
| | | | | | | but was conscious | |
| 192420 | Female | 23 | Caucasian (non-Hispanic) | Bachelor's | Married, divorce in progress | Punched in the head, no known trauma afterward | PTSD |
| 161716 | Male | 49 | Caucasian (non-Hispanic) | Some college, no degree | Married | None | None |
| 182714 | Male | 43 | Caucasian (non-Hispanic) | Some college, no degree | Single | None | Autism, generalized anxiety disorder |
| 151611 | Male | 30 | Caucasian (non-Hispanic) | AA degree | Married | None | None |
| 131816 | Male | 36 | Black | Some college, no degree | Single | None | None |
| 191820 | Male | 28 | Caucasian (non-Hispanic) | High school | Single | Pistol whipped in the head, lost consciousness for a bit | Anxiety, asthma |
| 191220 | Male | 73 | Caucasian (non-Hispanic) | Some college | Married three times | Multiple head injuries from playing football and being in the army, experiences memory issues, trouble remembering names (including his grandkids) and dates | None |
| 151420 | Male | 18 | Caucasian (non-Hispanic) | Expecting to receive his HS diploma | Single | Splitting his head open | ADHD |
| 162054 | Male | 65 | Caucasian (non-Hispanic) | High school | Married | None | None |
| 182819 | Male | 34 | Caucasian (non-Hispanic) | 10th-grade education | No info | Fell on antique radio on his head | ADHD, anxiety, depression, suicidal ideation |
| 122515 | Female | 47 | Caucasian (non-Hispanic) | AA in Liberal Arts | Married | Hit in the head and needed stitches | Adjustment disorder with |

| | | | | | | | |
|--------|------|----|--------------------------|---|----------|--|---|
| | | | | | | | depression and anxiety |
| 122319 | Male | 37 | Caucasian (non-Hispanic) | GED | Married | Split his head open in a four-wheeler accident | Dyslexia, ADHD, schizophrenia, bipolar disorder |
| 160811 | Male | 31 | Caucasian (non-Hispanic) | High school, attended special education classes | Single | None | Learning disability, extremely low intelligence |
| 121610 | Male | 44 | Caucasian (non-Hispanic) | Two years of college | Single | None | Major depressive disorder, schizophrenia |
| 101513 | Male | 56 | Caucasian (non-Hispanic) | GED | Divorced | None | Polysubstance abuse, antisocial traits |
| 120408 | Male | 21 | Caucasian (non-Hispanic) | GED | Single | None | PTSD, major depression, and antisocial personality traits |
| 181711 | Male | 20 | Caucasian (non-Hispanic) | High school | Single | None | ADHD, PTSD |
| 170610 | Male | 51 | Caucasian (non-Hispanic) | High school | Single | None | Major depressive disorder, obsessive-compulsive disorder |

Table 2: Information Gathered on Group 2

| Subject | Gender | Age | Race | Highest Education Completed | Marital Status | History of Head Injury/Injuries | History of Mental Disorder(s) |
|---------|--------|-----|-------|---|----------------|---|-------------------------------|
| 112409 | Male | 49 | Black | No info | Single | None | Schizophrenia |
| 110609 | Male | 29 | Black | High school, received special education diploma | Single | At age 20, a basketball hoop fell on his head. traumatic head injury with multiple lacerations to | ADHD |

| | | | | | | | |
|--------|--------|----|---------------------------------|----------------------------|----------|--|---|
| | | | | | | the face, damage to the eyes and teeth | |
| 121810 | Male | 37 | Caucasian (non- Hispanic) | GED | Married | None | Paranoid schizophrenia |
| 142110 | Male | 49 | Black | Some 11th grade | No info | None | PTSD, depression, alcoholism |
| 151910 | Male | 57 | Caucasian (non- Hispanic) | 11th grade | Divorced | None | Bipolar disorder, ADHD |
| 101509 | Male | 76 | Caucasian (non- Hispanic) | High school | Divorced | Had an operation 10 or 15 years ago that took a blood clot out of his head (left frontal, temporal), and only one seizure episode.”, brain tumor, headaches | Brain tumor, seizure disorder, history of increased PSA |
| 172607 | Female | 51 | Black | Some technical college | No info | None | Paranoid schizophrenia |
| 162410 | Male | 19 | Caucasian (non- Hispanic) | Some college | Single | Hit in the head from someone stealing his car | Bipolar Disorder (I) |
| 132112 | Male | 55 | Black | Some 9 th grade | Single | None | None |
| 142908 | Male | 55 | Black | No info | No info | Unspecified head injury | Schizoaffective disorder |
| 111510 | Male | 18 | Caucasian (non- Hispanic) | 8 th grade | Single | None | Antisocial disorder |
| 142908 | Male | 62 | Caucasian (non- Hispanic) | 9 th grade | Divorced | None | Organic brain syndrome, stroke, dementia, and seizure |
| 162308 | Male | 56 | Caucasian (non- Hispanic) | No info | No info | None | Paranoid schizophrenia |

| | | | | | | | |
|---------------|--------|----|--------------------------|-----------------------|----------------------------|---|--|
| 131808 | Male | 42 | Caucasian (non-Hispanic) | Some high school | Married | Unspecified head injury during childhood | Paranoid schizophrenia |
| 181607 | Male | 39 | Caucasian (non-Hispanic) | GED | Two marriages, one divorce | None | Bipolar disorder (I), depressive disorder, antisocial personality disorder |
| 111510 | Male | 28 | Caucasian (Hispanic) | Some college | Single | None | Antisocial personality disorder, paranoid schizophrenia |
| 110710 | Male | 24 | Caucasian (Hispanic) | High school | Married | None | Paranoid schizophrenia, borderline personality traits |
| 100611 | Male | 49 | Caucasian (non-Hispanic) | GED | No info | None | Generalized anxiety disorder, substance abuse |
| 191411 | Male | 42 | Caucasian (non-Hispanic) | High school | Married | None | Depressive disorder |
| 182911 | Male | 39 | Caucasian (Hispanic) | 9 th grade | Single | None | Depressive disorder |
| 181511 | Male | 21 | Caucasian (non-Hispanic) | Some 9 th | Single | None | Polysubstance dependence |
| 141111 | Male | 56 | Caucasian (non-Hispanic) | No info | Single | None | Bipolar disorder |
| 131711 | Female | 39 | Caucasian (non-Hispanic) | Some college | Single | None | Bipolar disorder |
| 131711/131811 | Male | 50 | Caucasian (non-Hispanic) | High school | Widowed | None | Bipolar disorder |
| 122511 | Male | 49 | Black | High school | Single | History of head injuries; hit by a car while riding his bike and hit his head on a rock | Paranoid schizophrenia |

| | | | | | | | |
|--------|--------|----|-----------------------------|----------------------------|--------|--|--|
| 120411 | Male | 27 | Caucasian (non-Hispanic) | GED | Single | Head injury at 18 y/o, slipped on clothing and hit his head on the counter | Paranoid schizophrenia, antisocial personality disorder traits |
| 121010 | Male | 24 | Black | Some 9 th grade | Single | None | Schizophrenia, paranoid type, antisocial personality disorder |
| 120510 | Male | 18 | Black | 8 th grade | Single | None | Antisocial personality disorder |
| 192010 | Female | 27 | Caucasian (non-Hispanic) | 10 th grade | Single | None | Adjustment disorder with mixed anxiety and depressed mood |
| 142321 | Male | 40 | Black | High school | Single | Hit in the head with a hammer | Bipolar disorder |

DISCUSSION

Based on the results, there were more head injuries in sex offenders that have committed sex crimes against children than criminal offenders that have committed non-sex crimes.

Though this may initially seem to prove that the earlier prediction from this research paper is correct, the results must also prove to be statistically significant to truly support the hypothesis (Aron et al., 2013).

This experiment involves frequency/count data or nominal data for two independent groups, which means that a chi-square test should be used to determine whether the results were statistically significant (Winton, 2009). The chi-square test compared the observed and expected frequencies between the two independent groups in this experiment, which were the sex offenders group and the non-sex offenders criminal group (Winton, 2009). This test was calculated using the IBM Statistical Package for the Social Sciences Statistics for Windows, Version 28.0.

The results from the chi-square test revealed that 30% of individuals in the sex offenders group had a history of one or more head injuries while 26.7% of non-sex criminal offenders had a previous history of one or more head injuries. The chi-square test also showed that the results were not statistically significant or that there was not a statistically significant relationship between sex offender status and head injuries $\chi^2 (1, N = 60) = .08, p = .774$.

Table 3: Criminal Offense Head Injury Crosstabulation

| | | | Head_Injury | | Total |
|------------------|------------------|---------------------------|-------------|----------------|--------|
| | | | Head_Injury | No_Head_Injury | |
| Criminal_Offense | Sex_Offender | Count | 9 | 21 | 30 |
| | | Expected Count | 8.5 | 21.5 | 30.0 |
| | | % within Criminal_Offense | 30.0% | 70.0% | 100.0% |
| | Non-Sex_Offender | Count | 8 | 22 | 30 |
| | | Expected Count | 8.5 | 21.5 | 30.0 |
| | | % within Criminal_Offense | 26.7% | 73.3% | 100.0% |
| | Total | Count | 17 | 43 | 60 |
| | | Expected Count | 17.0 | 43.0 | 60.0 |
| | | % within Criminal_Offense | 28.3% | 71.7% | 100.0% |

Table 4: Chi-Square Test

| Chi-Square Tests | | | | | |
|------------------------------------|-------------------|----|-----------------------------------|----------------------|----------------------|
| | Value | df | Asymptotic Significance (2-sided) | Exact Sig. (2-sided) | Exact Sig. (1-sided) |
| Pearson Chi-Square | .082 ^a | 1 | .774 | | |
| Continuity Correction ^b | .000 | 1 | 1.000 | | |
| Likelihood Ratio | .082 | 1 | .774 | | |
| Fisher's Exact Test | | | | 1.000 | .500 |
| Linear-by-Linear Association | .081 | 1 | .776 | | |
| N of Valid Cases | 60 | | | | |

Limitations

Since sex offenders that have committed crimes against children are considered a specific subset of a population, collecting available data on these persons was more challenging than collecting data from persons who would not qualify as a specific subset population. Typically, in psychological research, it is recommended to have at least 30 participants in each group, so that the data that is found is more likely to be statistically significant (Aron et al., 2013). Though this research had at least 30 participants for each group, it is always recommended to increase the sample size so that the power and statistical significance are more likely to increase (Aron et al., 2013).

This research is also limited to sex offenders and criminal offenders that have been evaluated by a licensed psychologist to account for their competency for trial and cannot be identically compared to a general pool of criminal offenders that may not require competency evaluations.

CONCLUSION

Based on the results, the data found that out of the two groups, the number of criminal offenders with head injuries was the most prevalent in sex offenders that have committed sex crimes against children. However, when answering the question of whether there is a relationship between sex offender status and head injuries or not, it was concluded that the data calculated was not of statistical significance.

Although this research study did not confirm a correlation between head injuries and sexually motivated crimes, this article hopes to encourage other researchers to explore the potential correlations between sexually motivated criminal offenses against children and links to what may encourage these deviant behaviors.

A recommendation for a future research study would be to increase the sample size from thirty people in each group to fifty people in each group. Another recommendation would be to gather information from a general pool of criminal offenders rather than criminal offenders that are believed to potentially not be competent for trial due to suspicion of or prior history of mental disorder or disability.

Through further exploration of the topic and understanding of the causation behind these criminal behaviors, more ideas regarding treatment plans may arise for these sex offenders and more ideas for prevention methods for these crimes may be created and implemented.

REFERENCES

- American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders (DSM-5®), American Psychiatric Publishing, 2013. ProQuest Ebook Central, <http://ebookcentral.proquest.com/lib/ucf/detail.action?docID=1811753>.
- Aron, A., Coups, E. J., & Aron, E. (2013). The t Test for Independent Means. In *Statistics for psychology* (pp. 294–295). essay, Pearson.
- Child sexual abuse definition & facts: Prevent child abuse NC*. Prevent Child Abuse North Carolina. (2021, September 17). Retrieved November 11, 2021, from <https://www.preventchildabusenc.org/resource-hub/about-child-sexual-abuse/>.
- Fabian, J. M. (2012). Neuropsychology, neuroscience, volitional impairment, and sexually violent predators: A review of the literature and the law and their application to civil commitment proceedings. *Aggression and Violent Behavior*, 17(1), 1–15. doi: 10.1016/j.avb.2011.07.002
- Focquaert, F., & Gilbert, F. (2015). Rethinking responsibility in offenders with acquired pedophilia: Punishment or treatment? *International Journal of Law and Psychiatry*, 38, 51–60. doi: 10.1016/j.ijlp.2015.01.007
- Human Research Protection Program and Institutional Review Board. What is the Institutional Review Board (IRB)? Research Office. (2017, May 17). <https://research.oregonstate.edu/irb/frequently-asked-questions/what-institutionalreviewboard-irb>.
- IBM Corp. Released 2021. IBM SPSS Statistics for Windows, Version 28.0. Armonk, NY: IBM Corp

Mayo Clinic. (2021, February 4). Traumatic brain injury. Mayo Clinic.

<https://www.mayoclinic.org/diseases-conditions/traumatic-braininjury/symptomscauses/syc-20378557>.

Scarpazza, C., Finos, L., Genon, S., Masiero, L., Bortolato, E., Cavaliere, C., Pezzaioli, J., Monaro, M., Navarin, N., Battaglia, U., Pietrini, P., Ferracuti, S., Sartori, G., & Camperio Ciani, A. S. (2021). Idiopathic and acquired pedophilia as two distinct disorders: An insight from neuroimaging. *Brain Imaging and Behavior*, 15(5), 2681–2692.

<https://doi.org/10.1007/s11682-020-00442-z>

Suchy, Y., Whittaker, J. W., Strassberg, D. S., & Eastvold, A. (2009). Neurocognitive differences between pedophilic and nonpedophilic child molesters. *Journal of the International Neuropsychological Society*, 15(2), 248–257. doi: 10.1017/s1355617709090353

Vandiver, D. M., & Walker, J. T. (2002). Female Sex Offenders: An Overview and Analysis of 40 Cases. *Criminal Justice Review*, 27(2), 284–300.
<https://doi.org/10.1177/073401680202700205>

Winton, M. (2009). In CCJ 6706 Quantitative Methods and Computer Utilization in Criminal Justice Course Handbook (pp. 42–43).

Winton, M. A., & Mara, B. A. (2013). When Teachers, Clergy, and Caretakers Sexually Abuse Children and Adolescents. Durham, NC: Carolina Academic Press.