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DEMOGRAPHIC CHARACTERISTICS AND TRAUMA SYMPTOMOLOGY IN
JUVENILE JUSTICE RESIDENTS AT ECHO GLEN CHILDREN'S CENTER

A Dissertation

Presented to the Faculty of
Antioch University Seattle
Seattle, WA

In Partial Fulfillment
of the Requirements of the Degree
Doctor of Psychology

By

Britta L. Bergan

January 2016

DEMOGRAPHIC CHARACTERISTICS AND TRAUMA SYMPTOMOLOGY IN
JUVENILE JUSTICE RESIDENTS AT ECHO GLEN CHILDREN'S CENTER

This dissertation, by Britta L. Bergan, has been approved by
the committee members signed below who recommend that it
be accepted by the faculty of the Antioch University Seattle in
Seattle, WA in partial fulfillment of requirements for the degree of

DOCTOR OF PSYCHOLOGY

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ABSTRACT

DEMOGRAPHIC CHARACTERISTICS AND TRAUMA SYMPTOMOLOGY IN
JUVENILE JUSTICE RESIDENTS AT ECHO GLEN CHILDREN'S CENTER

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Exposure to traumatic and stressful events has become increasingly commonplace and the impact of such experiences has been well documented. Trauma events in childhood have been associated with a number of factors, including maladaptive emotional and behavioral responses, increased vulnerability for exposure to additional traumatic events, and adverse experiences later in life. Juvenile justice youth have been found to have higher rates of trauma exposure, when compared to community samples of same-aged peers. The population of youth residing at Echo Glen Children's Center, in Snoqualmie, Washington, exhibit unique characteristics for a juvenile justice population, including age (the youngest juvenile offenders in the state of Washington), gender (the only facility for adjudicated girls in the state of Washington), and mental health (a Juvenile Rehabilitation Administration (JRA) mental-health designated treatment facility). This archival study explored the relationships among demographic variables (age, gender, ethnicity, committing offense, and co-morbid mental health diagnoses) and trauma symptomology endorsed by new intake residents at Echo Glen Children's Center. The overall aim included describing, in demographic terms, the youth entering treatment at Echo Glen, in order to gain a better sense of whether their unique characteristics relate to trauma exposure and symptomology. Four hundred and sixty-six youth, ages 10–18, completed a

self-report computerized assessment, the Voice-Diagnostic Interview Schedule for Children (V-DISC), upon intake at Echo Glen Children's Center from February 11, 2011, to June 30, 2014. Youth endorsement on Post Traumatic Stress Disorder items provided information on trauma exposure and symptomology and demographic information was obtained through JRA official records. Results indicated that the majority of youth entering Echo Glen have been exposed to trauma (81.3%). For trauma-exposed youth, relationships between demographic variables and trauma were evident for gender, age, committing offense, and mental health diagnoses. There was no relationship found between trauma symptoms and ethnicity. This study identified the associations among demographic characteristics, trauma exposure, and symptomology in youth entering treatment at Echo Glen Children's Center. The electronic version of this dissertation is at AURA: Antioch University Repository and Archive, <http://aura.antioch.edu/> and OhioLINK ETD Center, <https://etd.ohiolink.edu>

Keywords: juvenile justice, trauma, trauma exposure, trauma symptomology, traumatic stress, PTSD, mental health

Dedication

This work is dedicated to my family. The support and encouragement of my parents and sister made this journey possible, even in the most challenging of times. Thank you for your enduring belief, strength, and love. I would also like to acknowledge and honor my grandfather. As a lifelong learner and avid reader himself, he inspired the same values in me at a very young age. I have fond and beloved memories of discussing my studies and interesting research together, throughout my first two years enrolled in Antioch's Clinical Psychology program.

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I would like to acknowledge my dissertation chair, Dr. Patricia Linn, for the time, effort, and guidance she provided during my dissertation process, as well as for making research fun and interesting, as my Quantitative Research and Statistics professor. Thank you for your support, humor, and encouragement throughout this extensive project.

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I would like to recognize the staff members of Echo Glen Children's Center, who tirelessly demonstrate the qualities of persistence, willingness, and determination on a daily basis, in an often arduous and demanding environment. I am truly honored to have worked alongside them in a juvenile justice facility that espoused the values of rehabilitation and positive therapeutic relationships, within a skill-building treatment milieu. I also want to acknowledge the residents of Echo Glen Children's Center, without whom this research would not have been possible. These youth hang in the balance, between the repercussions of justice system involvement and forgotten childhoods.

Working with them undoubtedly provided some of the most challenging and rewarding experiences in my professional career thus far. I learned the true value of perseverance, genuineness, and validation, which are all qualities I continually strive to incorporate professionally and personally in my life today.

I would like to thank the many Department of Social and Health Services staff members who answered my questions and provided feedback during the Institutional Review Board application process, as well as those who assisted with compiling my demographic and V-DISC data and completed the de-identification process.

Finally, I would like to thank Dr. Hayley Quinn for her assistance and support with inter-rater reliability and data analysis procedures.

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Chapter I: Background

Focus of the Study

Previous research has documented the increased prevalence of Post-Traumatic Stress Disorder (PTSD) and trauma exposure in youth involved in the juvenile justice system. The present study explored the prevalence of trauma symptomology in a specific population of juvenile justice residents who reside at Echo Glen Children's Center (EGCC) in Snoqualmie, Washington. Echo Glen houses a unique and specialized population, including the youngest juvenile offenders in the state of Washington. Echo Glen is the only residential treatment facility for adjudicated girls in the state of Washington and it is also a Juvenile Rehabilitation Administration (JRA) mental-health designated treatment facility (Department of Social and Health Services, 2009). This study explored the relationship among demographic variables and trauma symptomology endorsed by new intake residents at Echo Glen Children's Center. Additionally, co-morbid mental health diagnoses were also examined. These attributes were explored through the following research question: How do demographic characteristics relate to trauma symptomology in youth entering treatment at Echo Glen?

In order to examine this question, the following hypotheses were identified:

1. There will be a difference in trauma symptomology endorsed by boys and girls.
2. There will be a relationship between age and trauma symptomology, in that older residents will endorse more trauma symptoms than younger residents.
3. Different trauma symptoms will be endorsed by those who identify with different ethnicities.

4. There will be a relationship between committing offense and trauma symptomology in Echo Glen residents.
5. There will be a relationship between trauma symptoms and co-morbid mental health diagnoses, in that some residents with trauma symptomology will also have other mental health diagnoses.

Demographic Variables of Interest

The distinct characteristics of Echo Glen residents have led to a specific focus on the demographic variables outlined above. As Echo Glen is the only facility in the state of Washington for adjudicated girls, as well as the youngest residents of both sexes, gender and age are two relevant demographic variables of interest. Echo Glen youth come from all over the state of Washington, from out of state, and on occasion other countries, providing a diverse representation of ethnic and cultural backgrounds. Additionally, Echo Glen residents commit a multitude of criminal offenses; exploring whether a relationship exists between a specific committing offense and exposure to trauma (e.g., assault/robbery and exposure to physical trauma; prostitution/sexual offenses and exposure to sexual trauma) was an additional area of interest.

Purpose of Inquiry

The goal of this study was to identify and describe the aforementioned demographic variables, as they may be related to trauma symptomology upon entry to Echo Glen. If a verifiable relationship existed between demographics and trauma symptomology, there would be a better understanding of the potential for trauma exposure in juveniles entering Echo Glen. This study aimed to describe, in demographic

terms, the youth residing at Echo Glen to gain a better sense of whether the unique characteristics of these residents related to trauma exposure and symptomology.

Chapter II: Literature Review

Children and Traumatic Stress

Previous research has explored the prevalence of exposure to traumatic events in childhood and adolescence. In order to explore the incidence of PTSD and other mental health diagnoses, as related to exposure to potentially traumatic events in childhood, Copeland, Keeler, Angold, and Costello (2007) investigated the risks for developing PTSD across traumas experienced in childhood, including violence, sexual trauma, other injury or trauma, witness to trauma, and learning about trauma. The participants included 1,420 children, ages nine, eleven, and thirteen, and their parents. This sample had originally participated in The Great Smoky Mountain longitudinal study of psychopathology and use of medical services in childhood (this initial study consisted of 20,000 participants, of whom the aforementioned 1,420 were randomly selected). In tracking these children annually through the age of sixteen, the results of Copeland et al. indicated that more than 67% of youth reported exposure to at least one traumatic event by the age of sixteen. While only a little more than one-eighth of the sample met criteria for PTSD, exposure to multiple traumas (in particular violent and sexual traumas) increased the likelihood of such symptoms. Results also indicated that the most common traumatic events experienced were witnessing an event directly or learning about it from someone else/vicarious exposure. Factors identified as contributing to the presence of traumatic symptomology included those children who were older in age, who reported a history of trauma exposure and anxiety, and who endorsed exposure to an adverse family environment. One threat to internal validity included maturation, as this was a longitudinal study. One identifiable threat to external validity included the use of

payment (\$10 to every child and parent interviewed) upon completion of each annual interview. Overall, exposure to traumatic events in childhood was found to be more the rule than exception for the participants involved in this study. Additionally, anxiety and depressive symptoms were frequently linked to traumatic experiences as well.

Nooner et al. (2012) also established that rates of traumatic exposure peak in adolescence, when compared to adulthood. In order to explore the occurrence of PTSD in adolescence, 32 studies conducted from 2000–2011 were reviewed, twelve of which occurred in countries outside of the United States. Four out of five adolescents were found to meet criteria for exposure to a traumatic event, according to the Diagnostic and Statistical Manual of Mental Disorders, Fourth Version, Text- Revision (DSM-IV-TR). Of those adolescents exposed to trauma, the average rate of PTSD was 14%. The rates of PTSD in adolescence were specifically related to trauma type: trauma associated with shame or deviance, such as sexual abuse, had a higher incidence of PTSD. When compared to boys, adolescent girls were two times as likely to develop PTSD. The biological and developmental ramifications of trauma exposure were discussed, due to the unique brain- and behavior-based changes that occur during adolescence. Overall, this research identified risk factors to consider in the development of trauma-focused interventions in adolescence. Recommendations included implementing preventative interventions during middle school, educating parents and teachers about trauma-focused interventions, incorporating gender-specific interventions (due to a higher risk of developing PTSD in girls), interventions aimed at either trauma specific exposure and/or complex-trauma, PTSD and co-morbid diagnoses (e.g., substance use, depression, and

anxiety), and the improvement of youths' emotion regulation and interpersonal effectiveness skills (Nooner et al., 2012).

Finkelhor, Ormrod, Turner, and Hamby (2005), examined the prevalence of violence, crime, and victimization reported by 2,030 children ages two to seventeen. To encourage a more holistic outlook on trauma exposure, the authors focused on the interrelatedness of trauma events (e.g., witnessing domestic violence and directly experiencing physical abuse; dating violence and peer victimization), as well as the scope and variety of trauma exposure in childhood. With the aim of studying the effects of trauma across gender, ethnicity, and age, researchers interviewed youth and parents over the telephone. Results indicated that 29% reported zero incidents of direct or indirect victimization within the same year of this study. The majority (52% or 1 in 2) reported physical assault; 35% (1 in 3) witnessed violence or another form of indirect victimization; 27% (1 in 4) experienced a property offense; 13% (1 in 8) experienced child maltreatment, including physical, sexual/emotional abuse or neglect, and family abduction/custodial interference; and .083% (1 in 12) experienced sexual victimization. One strength of this study included a detailed appendix, which provided interview questions and operational definitions for trauma and victimization terms. One threat to internal validity included the use of a "recently constructed" Inventory of Childhood Victimization (JVQ) (p.7; Finkelhor et al., 2005), for which information pertaining to reliability and validity was not provided. One threat to the external validity of this study included generalization of results, as the sample selection consisted only of parents and youth living in homes with landline telephones. Overall, this article promoted the adoption of a more broad-based approach to trauma exposure and highlighted the

importance of considering the potential for exposure to multiple traumatic events for the youth involved in this study. Previous research has established the pervasiveness of trauma exposure in childhood and adolescence. The effects of such events affect overall mental health in a number of ways.

Hukkelberg (2014) evaluated two of the proposed four-factor models of Post Traumatic Stress (PTS) reactions, the dysphoria (re-experiencing, avoidance, dysphoria, and hyperarousal) and numbing (re-experiencing, avoidance, numbing, and hyperarousal) models. Including the overall goal of evaluating these different models with regards to best representation of PTS symptoms, the author specifically sought to explore gender differences in symptom endorsement as well. A hypothesis was not identified, due to a lack of agreement in previous research as to which of the four-factor models more accurately depicted PTS. Participants included 390 Norwegian children and adolescents, boys and girls ages 10–18, who were part of a larger study exploring the treatment of traumatized children. Parents or older youth initially completed The Traumatic Events Screening Inventory for Children (TESI-C), to determine whether one or more trauma events had been experienced. For those youth endorsing trauma exposure, The Child PTSD Symptom Scale (CPSS), a self-report questionnaire, was completed. While results supported both models and neither was found to more accurately depict PTS, symptoms were found to increase, as the number of trauma experiences rose. Additionally, girls endorsed more PTS symptoms than boys. A strength of this study included the author's use of diagrams depicting PTS symptoms and how they fit into the dysphoria and numbing models. One threat to external validity involved generalizability; the youth and at least one parent were required to speak Norwegian, as participants were recruited from

eight child guidance clinics throughout Norway. For the youth involved in this study, a gender disparity in symptom endorsement was found, with girls endorsing higher symptom levels than boys.

Hunt, Martens, and Belcher (2011), aimed to explore the prevalence of Post Traumatic Stress Disorder (PTSD) in African American youth, in order to determine contributing risk factors. The authors hypothesized that African American youth who were girls, who were older, and whose parents had a substance use disorder, mental health disorder or were incarcerated, would have a higher chance of endorsing more PTSD symptoms. Participants included 257 children involved in treatment from 2004–2007, at an urban mental health center specializing in the treatment of traumatic exposure in children. The authors used data from medical records, including demographic information and trauma symptoms endorsed on The Trauma Symptom Checklist for Children (TSCC) self report measure, and The University of California at Los Angeles Posttraumatic Stress Disorder Index (UCLA PTSD Index), parent and child trauma exposure and symptom report. Caregiver report was used to determine the presence of parental risk factors. Results indicated that community violence was associated with PTSD symptoms on both the TSCC and UCLA PTSD measure; being a girl and being exposed to physical abuse were both associated with more PTSD symptoms endorsed on the UCLA PTSD measure; and age (being older) was not associated with PTSD symptom endorsement on either measure. Strengths of this study included the acknowledgement of a variety of cultural factors that may influence African American children's response to trauma, such as relationships with extended family members, peer support, and shared community experiences. One limitation was the authors' lack of discussion around the

results of parental risk factor findings (substance use disorder, mental health disorder or incarceration). For the youth in this study, being exposed to community violence and being a girl were two characteristics that were more likely to increase trauma symptoms. This study was reported to be the first of its kind to explore the relationship between trauma exposure and risk factors in African American children.

PTSD and Co-Occurring Disorders

Two frequently co-occurring disorders of PTSD include substance use and depression. Mills, Teesson, Ross, and Peters (2006) discussed the importance of assessing for the co-morbidity of PTSD, substance use, anxiety, and depressive disorders, as the presence of one of these disorders has been found to greatly increase the likelihood of another. This study explored the links among trauma exposure, PTSD, and substance use. Participants included 10,641 adult respondents from the Australian National Survey of Mental Health and Well-Being in 1997. An in-person interview was conducted with a structured questionnaire addressing demographics, neuroticism, chronic health conditions, psychiatric disorders, suicidal ideation, disability, and general psychological morbidity. Results indicated that approximately 1.3% of the sample met criteria for PTSD, with 33% of participants with PTSD also meeting criteria for a substance use disorder. Approximately 67% of participants with both PTSD and substance use disorders, as well as those with PTSD alone, also met criteria for an affective disorder, while 50% met criteria for an anxiety disorder. One strength of this study was the acknowledgment of limitations due to their sample participants. One threat to external validity involved the selection of subjects, who were limited to those living in private dwellings (e.g., houses, home units, trailers, and tents), who agreed to participate. For

sample participants in this study, having either PTSD or a substance use disorder greatly increased the likelihood of having the other condition. Additionally, those with both disorders reported poorer physical and mental health, as well as higher rates of disability. The importance of screening for both substance use disorders and PTSD was emphasized in this study.

Brady and Sinha (2005) examined the neurobiological links between substance use and mental health disorders. They highlighted previous research pertaining to an increased incidence of PTSD and substance use disorders in military veterans and civilian populations. Additional topics discussed included the common symptomology of these two disorders, as well as the similar neurobiologic processes involved in both the fight-or-flight response of PTSD and the withdrawal stage of chronic substance use. In reviewing literature, the authors noted that substance use has been found to increase a person's likelihood of exposure to traumatic events, by lowering inhibitions, which thereby increased exposure to precarious situations. Similarly, long-term, chronic abusers had a heightened arousal state, which then enhanced their susceptibility to developing PTSD after exposure to trauma. Conversely, self-medication and symptom relief through use of substances had been reported as a reason for substance use following exposure to traumatic events. Such substance use may then prolong and exacerbate PTSD symptomology (Brady & Sinha, 2005).

In order to examine the link between PTSD and depression, Aderka, Foa, Applebaum, Shafran, and Gilboa-Schechtman (2011), explored the relationship between PTSD and depression symptoms during prolonged exposure (PE) therapy treatment. Specifically, the authors looked at changes in PTSD and depressive symptoms of children

and adolescents undergoing PE treatment. This study was reported to be the first of its kind to explore the relationship between anxiety and depression throughout the duration of PTSD treatment. Participants included seventy-three children and adolescents between the ages of eight and eighteen, as well as their parents. The youth underwent PE, while completing PTSD and depression measures (e.g., Child PTSD Symptom Scale, CPSS; the Beck Depression Inventory, BDI; and the Children's Depression Inventory, CDI, dependent upon age) before each session (12–15 sessions in all). Results indicated that changes in PTSD symptoms led to changes in depression symptoms and vice versa. Strengths of this study included a detailed description of participant exclusion criteria. One threat to external validity included generalization, as inclusion criteria required fluency in Hebrew, because the sample was drawn from one children's medical center in Israel. Overall, results supported the use of prolonged exposure therapy in the treatment of PTSD, which was found to effectively reduce depression symptoms for the children in this study. In the next section, the associations among PTSD, co-occurring disorders, and exposure to traumatic events early in life will be shown to have a deleterious impact on adulthood functioning as well.

Adverse Childhood Experiences

The Center for Disease Control and Prevention [CDC] (2013), conducted a study from 1995–1997, exploring the associations among childhood maltreatment, health, and well-being in later life. The Adverse Childhood Experiences (ACE) study explored the occurrence of a number of adverse experiences including physical abuse, emotional abuse, sexual abuse, exposure to family violence, and household substance use. Over 17,000 adults were interviewed about their childhood experiences from birth to eighteen

years of age. Dong et al. (2004) conducted an archival study, in order to determine co-occurrence rates and the relationships among adverse experiences in childhood. The authors aimed to describe the connections among ten ACE categories pertaining to exposure to traumatic events. Participants included 8,629 adult respondents of the original 8,667 participants in the 1995–1997 ACE study (due to missing data regarding race and educational attainment, 38 of the original participants were excluded). Results indicated that two-thirds (67%) of respondents reported at least one ACE, of whom 87% also reported at least one additional ACE and 52% reported at least three additional ACEs. One strength of this study involved the inclusion of sample questions and operational definitions for certain concepts (e.g., criminal household member or mental illness). One threat to internal validity included memory accuracy, as adult respondents answered questions pertaining to childhood experiences. Overall, exposure to multiple adverse experiences in childhood appeared to be the standard rather than the exception for participants in this study, with such adverse experiences being interconnected, rather than independent from one another. Another conclusion included the importance of screening children for multiple trauma events, when they are known to be exposed to at least one (Dong, Anda, Felitti, Dube, Williamson, Thompson, Loo, & Giles, 2004).

In order to examine the pervasiveness of varying traumatic events experienced in childhood, Edwards, Holden, Felitti, and Anda (2003) also reviewed data collected from ACE study participants. The authors sought to describe the connections among three ACE categories pertaining to exposure (e.g., physical abuse, sexual abuse, and witnessing of maternal battering). Participants included all 8,667 adult respondents of the original ACE study. Results indicated that 21.6% of participants reported sexual abuse, 20.6%

reported physical abuse, and 14.0% reported witnessing violence against their mothers. Strengths of this study involved the inclusion of both men and women. As such, this study was reported to be the second ever to examine the long-term consequences of exposure to multiple trauma events on men. For those participants who reported experiencing exposure to any of the assessed maltreatment types, 34.6% reported more than one type of abuse as a child. One threat to internal validity included memory accuracy, as adult respondents answered questions pertaining to childhood experiences. In general, as the number of adverse experiences in childhood increased for these study participants, overall mental health was observed to decline in adulthood as well. Surviving adverse childhood experiences appeared to be a common occurrence, such events were frequently inter-related, and the effects on health and mental health functioning later in life were apparent for adult respondents of this study.

Archival Studies

Elder, Pavalko, and Clipp (1993) provided important information for researchers who plan to undertake an archival research study. Specifically, it is essential to match the research question to the already existing data. Additionally, the strength of one's data is a key factor in making the choice to conduct an archival data review. Working with archival data also necessitates a flexible researcher, who is open to adapting the research questions to better fit the data with which they are working. Similarly, Freburger and Konrad (2002) highlighted the efficiency and cost-effectiveness of conducting a secondary data analysis (when compared to a primary data analysis), particularly when looking at previously unexplored areas.

Rew, Koniak-Griffin, Lewis, Miles, and O'Sullivan (2000) discussed the usefulness of conducting secondary data analyses with adolescent populations, due to the challenges found in qualifying for funding and conducting primary research with large samples of youth. Additionally, secondary data analysis was identified as being more appropriate for use with descriptive, correlational, and exploratory research. These authors reviewed the strengths and limitations of secondary data analysis as well. When conducting a secondary data analysis, researcher familiarity with the data set is recommended, including a knowledge and awareness of the original operationally defined variables, as well as the historical-social-political context that surrounded the primary collection of data. However, it is also important for researchers to consider and verify the reliability and validity of secondary data. Strengths of secondary data analyses included cost-effectiveness, by saving time in the data collection phase and money, as secondary analysis is conducive to working with larger sample sizes that would often be more costly. Limitations of secondary data analyses included the fact that the data may be reflective of the goals and perceptions of the original researcher and may not be relevant to the goals and objectives of a new, secondary researcher. Additionally, archived data may be related to a particular, historical time and place that existed only within the context of the original data collection (Rew et al., 2000; Smith et al., 2011).

In regards to the design of the current study involving Echo Glen residents, it was important to consider the historical context surrounding the data set and sample participants. As an employee of Echo Glen for five years, the primary researcher had personal awareness surrounding the socio-historical-political context of Echo Glen and its youth. Additionally, the research question and hypotheses were coordinated with the data

set available at Echo Glen. Overall, the cost-effective, time-efficient, and descriptive/exploratory nature of archival data analysis was found to be compatible with the present study design.

Juvenile Justice and Mental Health

The unique mental health needs of juvenile justice youth have become an increasingly relevant research topic. Shufelt and Coccozza (2006) summarized research previously conducted by the National Center for Juvenile Justice and the Council of Juvenile Justice Administrators. The authors explored the prevalence of both mental health and substance use disorders in 1,400 boys and girls involved in the juvenile justice system in Louisiana, Texas, and Washington. These three states were identified as having previously understudied juvenile justice populations. Results indicated that 70.4% of youth met criteria for at least one mental health disorder, with disruptive disorders being the most common at 46.5%. Substance use disorders were a close second (46.2%), followed by anxiety disorders (34.4%), and mood disorders (18.3%). Furthermore, 79% of youth who met criteria for one mental health disorder met criteria for two or more, with over 60% of youth diagnosed with three or more mental health conditions. When compared to boys (67%), girls met criteria more often (80%) for at least one disorder. Overall, this review article highlighted the prevalence of both substance use and mental health disorders in the juvenile justice youth of these three states. The frequency of mental health and substance use disorders presents unique challenges and important considerations in treatment for juvenile offenders.

Adams, McCart, Zajac, Danielson, Sawyer, Saunders, and Kilpatrick (2013), conducted similar research exploring the prevalence rates and relationships between

psychiatric disorders, substance use, and exposure to traumatic events in non-detained delinquent and non-delinquent youth. Specifically, this study aimed to determine the frequency of post-traumatic stress disorder, depression, and substance use in delinquent and non-delinquent youth. The impact of trauma exposure on delinquency and clinical problems was also investigated. Participants included 3,423 youth, aged 12–17, who had previously participated in the 2005 National Survey of Adolescents Replication (NSA-R), which examined emotional problems, behavioral issues, and trauma exposure. Youth were interviewed at home via telephone, to gather information on delinquent behaviors, PTSD, Major Depression, alcohol abuse, drug use, sexual assault, physical assault, witnessed parental violence, witnessed community violence, and other traumatic events. Results indicated that delinquent youth were more likely to experience PTSD, depression, substance problems, and traumatic events, when compared to non-delinquent peers. For all youth, higher rates of psychiatric problems were associated with exposure to interpersonal violence and delinquent youth were more likely to have higher rates of PTSD, alcohol abuse, and non-experimental drug use (i.e., drugs used at least 4 times within the past year). Delinquency and alcohol abuse were more strongly linked with non-violent trauma exposure and delinquent girls were at a higher risk than boys for Major Depression. One strength of this study included the extensive and detailed acknowledgement of limitations in this research, such as relying solely on youth self-report. One threat to external validity included the use of payment (\$10), offered to each youth as incentive to complete the interview process. For the youth participating in this research, an increased risk was found for psychiatric disorders, substance use, and trauma exposure in non-detained delinquent youth, as well as higher rates of depression in girls.

Teplin, Abram, McClelland, Dulcan, and Mericle (2002), conducted an empirical study to examine the occurrence of psychiatric disorders in recently arrested and detained youth. The authors sought to overcome the methodological limitations found in similar previous research, which included biased samples, small sample sizes, and problems with measurement. Such issues were noted to be the result of using different/inconsistent exclusion criteria, omitting girls as subjects, a lack of clear diagnostic criteria, and utilizing unstandardized/invalidated instruments. One way the authors addressed these methodological issues was by using the Diagnostic Interview Schedule for Children (DISC, version 2.3) English and Spanish editions, which provided clear diagnostic criteria, a standardized administration procedure, and was well validated through research. Additionally, a large, random sample of youth was used: the participants included 1,829 ethnically diverse boys and girls, aged 10–18 years, randomly sampled from one juvenile detention center in Cook County (Chicago area). Results indicated that nearly two-thirds of boys and three-quarters of girls met diagnostic criteria for one or more mental health disorder. Nearly 60% of boys and more than two-thirds of girls met diagnostic criteria and had impairments specific to one or more mental health disorders. Almost half of all boys and girls had a substance use disorder and the youngest youth (≤ 13) had the lowest levels of mental health disorders. Additionally, rates of many disorders were higher among girls, non-Hispanic whites, and older adolescents. While the prevalence of most disorders was highest in non-Hispanic whites, the authors also acknowledged the fact that over half of youth in their juvenile justice population were ethnic minorities, specifically African-American or Hispanic. It was therefore concluded that the majority of detained youth with mental health conditions were ethnic minorities,

while white youth were found to have a higher prevalence of mental health issues overall. One strength of this study included a thorough explanation and rationale behind choosing participants from the Cook County detention center. One threat to external validity included the use of juvenile justice youth immediately after arrest and detention. The act of being arrested and detained could generate or exacerbate stress reactions and mental-health issues in youth, resulting in an over-representation of psychiatric symptoms. Overall, this study highlighted the prevalence of psychiatric disorders in this particular sample of juvenile justice youth, as well as acknowledged the challenge in working with youth who have mental health needs in the juvenile justice system.

Subsequently Teplin, Abram, McClelland, Washburn, and Pikus (2005), conducted a follow-up study with the abovementioned 1,829 youth. They specifically looked at whether those youth (one out of every six) diagnosed with a major mental disorder (defined as meeting criteria for a major depressive episode, manic episode or psychosis) received mental health treatment. Results indicated that more youth were perceived as needing treatment than were actually receiving it and only 16% had been given treatment by either the time of case disposition or within six months, whichever came first. One strength of this study included the clear definition of operational terms. One threat to external validity involved utilizing a single population of youth from one detention center, the majority of whom were ethnic minority and boys. This study highlighted the challenge in accessing and providing proper mental health treatment for those juvenile justice youth in this sample. In examining the unique needs of juvenile justice youth, the pervasiveness of mental health issues has become evident.

Underwood, Phillips, von Dresner, and Knight (2006) acknowledged the increase in mental health issues in the juvenile justice population, by reviewing critical treatment factors pertaining to juvenile justice youth. Through a review of previous literature, the authors explored the prevalence rates of various mental health disorders, relevant risk factors, and challenges pertaining to juvenile justice-involved youth. Important features of mental health treatment within juvenile justice facilities and current programs and interventions were explored as well. Results indicated an ever-increasing need for mental health treatment with juvenile justice populations. The importance of continually conducting research on effective mental health treatment interventions, which are relevant to juvenile justice programs, was discussed. One strength of this study was the acknowledgement of common behaviors and symptoms displayed by juvenile justice-involved youth, depending on specific mental health diagnosis. Additionally, information on behavior management strategies, effective response styles, and topics for staff training opportunities were provided. This article recognized that mental health issues in juvenile justice-involved youth have continued to increase within the research samples reviewed in this study, while the establishment of effective mental health treatment programs in juvenile justice facilities continues to be an area in need of further development.

Juvenile Justice and Traumatic Stress

Ford, Chapman, Hawke, and Albert (2007) discussed the ways in which traumatic stress among children and youth has been found to cause a rise in the utilization of pediatric health and mental health services, as well as an increased risk for child welfare and juvenile justice involvement, when compared to non-trauma exposed, same-aged community samples. These authors provided information on the prevalence of trauma

exposure in juvenile justice youth, current methods of screening and assessing for trauma exposure in juvenile justice youth, various treatment approaches, as well as attempts at implementing trauma-focused services with juvenile justice youth. Overall, this article highlighted the fact that the relationship between trauma exposure and juvenile justice youth has historically been an under-researched area. As a result, offering appropriate trauma-focused services for juvenile justice youth has yet to be widely initiated.

Abram et al. (2004) explored the pervasiveness of exposure to trauma and the twelve-month follow-up rates of PTSD for juvenile justice youth. Specifically, the authors sought to determine prevalence based upon gender, ethnicity, and age. Participants included 898 recently detained youth in the Cook County juvenile detention center near Chicago, Illinois. Results from the Diagnostic Interview Schedule for Children (DISC-IV) demonstrated that 92.5% of the juvenile justice sample had experienced at least one trauma; more boys (92.5%) than girls (84%) reported exposure to at least one traumatic incident; 84% of the sample had experienced more than one trauma; and more than half (56.85%) had experienced six or more traumas. Furthermore, more than one in ten detainees were found to have PTSD in the year before the interview. Strengths of this study included an explanation of specific traumas endorsed by participants, based on both gender and ethnicity. One threat to internal validity included selection, as more participants were boys (532) than girls (366), which influenced the higher prevalence of boys reporting exposure to trauma. This study indicated that trauma exposure and PTSD appeared to be more pervasive in the juvenile justice population in Cook County, than with same-aged community peers.

Likewise, Kerig, Ward, Vanderzee, and Moeddel (2009) examined the relationships among trauma exposure, PTSD, and mental health problems in juvenile justice youth. This study examined whether the experience of interpersonal trauma would predict mental health problems, whether the symptoms of complex- and simple- PTSD would explain the relationship between trauma exposure and mental health, and whether gender would influence the strength of the relationships among trauma, PTSD, and mental health. Participants included 289 newly detained, ethnically diverse, Mid-western boys and girls, aged 10–17. Results demonstrated that girls scored higher on rates of interpersonal trauma exposure (e.g., domestic violence and sexual abuse), whereas boys rated higher in exposure to community violence. Girls scored higher on measures of both simple- and complex-PTSD symptoms and reported more mental health problems in the areas of depression, anxiety, somatic complaints, and suicidal ideation. Yet, regardless of gender, trauma exposure, PTSD, and mental health problems were associated. Overall, the hypothesis was supported that PTSD mediates the relationship between interpersonal trauma and mental health problems, especially for girls. One strength of this study included the use of a number of well-validated trauma, PTSD, and mental health measures, including The UCLA Posttraumatic Stress Disorder Index for DSM-IV, Adolescent Version (PTSD-I), the Clinician Administered PTSD Scale for Children and Adolescents (CAPS-CA), and the Massachusetts Youth Screening Instrument, Second Version (MAYSI-2). One threat to external validity included the sample population, which consisted of adjudicated youth (as opposed to non-adjudicated, detained youth). In general, this study emphasized the influence of trauma with regard to mental health problems in those adjudicated youth within this sample population.

In order to determine the associative impacts of early childhood exposure to violence, victimization, and antisocial behaviors (e.g., the cycle of violence) for juvenile justice residents, DeLisi et al. (2010) explored incidents of institutional misconduct, prior trauma exposure, and individual risk factors for California Youth Authority (CYA) residents. Participants included 813 ethnically diverse, boys and girls, admitted to CYA between 1997–1999. These youth had previously participated in another research study that assessed for mental health conditions utilizing the Treatment Needs (TNA) battery, in order to determine usefulness of the measure. DeLisi et al. utilized the MAYSI-2, in order to assess for exposure to traumatic experiences, substance use, depression, anxiety, somatic complaints, suicidal ideation, and thought disturbances. Results indicated that those juvenile justice youth who reported more exposure to early life trauma had more incidents of sexual misconduct, suicidal activity, total forms of misconduct, internalizing and externalizing behaviors, noncompliance with staff requests and directives, and assaults against staff and other residents. One threat to internal validity involved the subjective and thereby limited nature of institutional misconduct reports. Overall, this study illustrated the influence of early life trauma on the behaviors of CYA involved youth.

Voisin et al. (2007) explored the prevalence of adverse health risk behaviors (e.g., suicidal threats, substance use, and unsafe sexual encounters) in juvenile justice youth exposed to community violence (e.g., violence between unrelated people, who may or may not know one another, typically occurring outside of the home), within the preceding twelve months. This study examined the incidence of health risk behaviors that occurred during the two months before detainment. Participants included 550 ethnically diverse,

boys and girls, aged 14–18, who were admitted to eight detention centers in Georgia from October 2001 to July 2003. Results indicated that 76.3% of detained juveniles reported exposure to at least one form of community violence. Exposure to community violence was associated with increased incidents of suicidal threats (36.8%), marijuana and alcohol use (56.5% and 73% respectively), and all unsafe sexual encounters, except trading sex for drugs (48%). One strength of this study included the fact that half the participants were girls. One threat to external validity involved the use of a convenience sample. In general, this study demonstrated that exposure to community violence was connected to various health risk behaviors for this sample of juvenile justice-involved youth. The authors concluded that detained juveniles could therefore benefit from intervention and prevention services during detention and confinement.

Given the high prevalence of trauma exposure and PTSD in juvenile justice populations, Becker and Kerig (2011) designed a study to explore whether trauma symptoms were associated with higher arrest rates, as well as an increase in crime severity, in boys. Specifically, the authors hypothesized that youth with more frequent arrest rates and who committed more severe crimes, would report increased PTSD symptoms. Participants included 83 adolescent boys, aged 12–17, in the custody of an unidentified juvenile detention center from September 2009 to May 2010. A self-report measure was utilized, to screen for trauma exposure and PTSD symptoms (PTSD-RI). A Likert-based scale was then used by each youth, to rate the degree of PTSD symptoms experienced within the past month (prior to completing the interview). Results indicated that 95% of the population reported exposure to at least one traumatic event and the presence of more PTSD symptoms positively predicated delinquency status (increased

arrest frequency and severity of crimes). The authors also concluded that the presence of PTSD symptoms, as opposed to exposure to a traumatic event, was directly linked to delinquent behaviors. One strength of this study was the author's acknowledgement of the need for increased screenings for trauma, in order to identify those youth in need of mental health services. One threat to construct validity included the reliance on youth self-report for trauma exposure and symptom presence. Overall, this research demonstrated a positive relationship between PTSD symptoms and juvenile delinquency: youth in this study with more PTSD symptoms were found to have higher rates of arrest and crime severity.

Similarly, Stimmel, Cruise, Ford, and Weiss (2014) investigated trauma exposure, post-traumatic symptoms, and aggression in boys. This research sought to determine whether PTSD symptoms would vary, depending on exposure to different traumatic events and to explore any connections between PTSD symptoms and aggressive behavior. The authors aimed to explore whether youth endorsing more exposures to traumatic events, reported higher levels of PTSD symptoms and aggression than youth with exposure to one traumatic event. For those youth with exposure to more than one traumatic event, the relationship between exposure to violence and increased aggression was hypothesized to be explained by the presence of more severe PTSD symptoms. Participants included 66 detained boys, ages 12–16, from two different northeastern juvenile detention centers. To be eligible to participate, participants were required to demonstrate at least a third-grade reading level, as indicated by the Peabody Picture Vocabulary Test, Fourth Edition (PPVT-4). Upon meeting this requirement, youth completed a self-report trauma and PTSD symptom screening measure (UCLA PTSD

Index for DSM-IV) and The Peer Conflict Scale, which incorporated four different aggressive response styles (reactive overt, proactive overt, reactive relational, and proactive relational), in order to determine the tendency of aggressive response. Results indicated that 86% of youth reported exposure to at least one traumatic event and 71% reported exposure to at least two traumatic events. Youth who reported exposure to more than one type of trauma had PTSD symptom scores that were three times higher than youth with exposure to one trauma event. Furthermore, more than two-thirds of youth endorsed exposure to violence/community violence and reported higher levels of symptom severity (the hyperarousal domain in particular), which were found to contribute to higher aggression scores. One strength of this study included the author's acknowledgement of the importance of screening for trauma in the juvenile justice population. One threat to external validity included the use of payment (a \$5 gift card to Subway or Burger King) during the youth assent process. This research demonstrated that exposure to multiple traumatic events, and more specifically violent events, increased the likelihood of having more PTSD symptoms, as well as displaying reactive aggressive tendencies, for the juvenile justice youth who participated in this study. Previous research has established the pervasiveness of trauma exposure and PTSD in the juvenile justice population. The effects of such traumatic events correlate with other mental health conditions in this population as well.

Juvenile Justice, PTSD, and Co-Occurring Disorders

Abram et al. (2007) examined the prevalence of PTSD and co-morbid mental health disorders (e.g., affective, anxiety, behavioral, and substance use) in the juvenile justice population. The authors sought to compare the occurrence of mental health

conditions for juvenile detainees with and without PTSD and with and without other mental health conditions. Participants included 898 ethnically diverse, boys and girls, aged 10–18. Results indicated that 93% of youth with PTSD also had at least one co-morbid psychiatric disorder, compared to those without PTSD; over half of the youth with PTSD had two or more co-morbid disorders, and 11% with PTSD had all four disorders. For girls in particular, alcohol use disorder and co-morbid alcohol and substance use disorders greatly increased the likelihood of having PTSD. Strengths of this study included the inclusion of specific subgroups within the sample (e.g., girls, Hispanics, and younger children). One threat to external validity involved utilizing a sample population from an urban detention center with particular gender, ethnic, and age-related demographics. This study highlighted the fact that the limited length of time the youth in this sample spent in juvenile detention often warranted seeking mental health treatment elsewhere, either in the home community or juvenile correctional/residential facilities.

Abram, Teplin, McClelland, and Dulcan (2003), sought to evaluate the six-month prevalence of co-morbid psychiatric disorders in juvenile justice youth, based upon gender, ethnicity, and age. The aim of this study was to provide data on substance use and mental health conditions, in order to develop effective interventions, improve mental health treatment of detained youth, and improve treatment in the community for youth deemed to be high-risk (e.g., substance abusers, abused or neglected). Participants included 1,829 ethnically diverse, boys and girls, aged 10–18. Results indicated that girls had higher co-morbidity rates than boys. Non-Hispanic whites had the highest rates of co-morbidity, while African-Americans had the lowest, and co-morbidity of mental health

and substance use were more prevalent in older detainees. One strength of this study involved the acknowledgement of the special procedures required when working with detained youth (e.g., thorough review of the limitations of confidentiality and assent process). One threat to external validity involved the use of a sample from an urban-based juvenile detention center. Overall, the prevalence of co-morbid mental health disorders in the juvenile justice youth sampled in this study warranted improved intervention and treatment.

Rosenberg, Vance, Rosenberg, Wolford, Ashley, and Howard (2014) investigated the connections among trauma exposure, psychiatric disorders, and resiliency factors in juvenile justice youth. Specifically, authors aimed to evaluate the impact of resiliency factors on the development of PTSD, depression, substance abuse, and exposure to trauma. Hypotheses included: there would be higher rates of trauma exposure in juvenile justice youth, compared with community-based same aged peers; there would be higher rates of PTSD and comorbidity between PTSD, substance abuse, and depression; and resiliency factors would have an influence on mediating the effects of trauma exposure. Participants were 350 juvenile justice-involved youth, 269 from New Hampshire and 81 from Ohio. Trauma symptoms and exposure were measured by the Stress and Resources Survey (a web-based questionnaire), the Upsetting Events Survey, which was modified from the Traumatic Life Events Questionnaire, and the UCLA PTSD Reaction Index. The Mood and Feelings Questionnaire was used to screen for levels of depression, substance abuse was measured by the CRAFFT, and resiliency was assessed by the Youth Resiliency Checklist, which included six protective factors (Involvement, Social Skills, Family Strengths, School Strengths, Social Supports, and Positive Outlooks). Results

indicated that juvenile justice-involved youth endorsed high levels of trauma exposure and PTSD, along with comorbid depression and substance abuse. Youth with multi-trauma exposures also had higher rates of psychiatric disorders in general: the average number of traumas reported by youth was 5.4, with these youth being eight times more likely to screen positive for PTSD, seven times more likely for depression, and over six times more likely for substance abuse, when compared to youth exposed to a single trauma. Additionally, the authors discovered that their hypothesis was not supported, which involved resiliency as a protective factor toward the negative effects of trauma exposure. However, the resiliency factor of “involvement” (participation in various pro-social activities) was identified as having a potentially protective impact on trauma exposure. One strength of this study was the author’s thorough description of all measures utilized, including a detailed rationale for utilizing a web-based tool to measure stress and trauma exposure. One threat to construct validity included the revision of the Traumatic Life Events Questionnaire (which they called Upsetting Events Survey), as it was modified to simplify reading to a seventh-grade level. Based on previous research, this may be an overestimation of reading level ability (in previous research studies conducted with juvenile justice youth, a third grade reading level requirement is frequently utilized). This article highlighted the increased prevalence of trauma exposure, PTSD, depression, and substance abuse, as well as the potentially mediating effect of pro-social activities and involvement, for the youth participating in this study.

PTSD and Juvenile Justice Demographic Characteristics

Throughout the above literature review, studies exploring the juvenile justice population, trauma symptomology, and a number of demographic characteristics have

been referenced, in order to provide the foundation and rationale for the current study. In the following section, the specific demographic features examined in Echo Glen youth will be further considered.

Gender

Research on gender as an important demographic variable in juvenile justice studies has indicated that the majority of juvenile justice residents have historically been boys (Abram et al., 2004; McReynolds & Wasserman, 2011; Teplin et al., 2002; Wasserman, McReynolds, Lucas, Fisher, & Santos, 2002) (for details on the last two studies referenced, please see “V-DISC”, under Measures section). However, an increase in girls involved in the juvenile justice system has occurred throughout the last few decades. As such, researchers have begun to make a concerted effort to ensure girls are represented (when available) in juvenile justice studies (Snyder, 2002; Voisin et al., 2007; McReynolds, Wasserman, Fisher, & Lucas, 2007). The prevalence of trauma exposure, type of trauma exposure, specific mental health symptomology, and substance use within the juvenile justice system have all been found to vary according to gender. Abram et al. (2004) found that more boys (93.2%) reported exposure to a trauma event when compared with girls (84.0%). Among those youth found to meet criteria for PTSD, the precipitating trauma type was dependent upon gender as well. Boys were found to more often endorse “having seen or heard someone get hurt very badly or be killed,” whereas for girls “thinking you or someone close to you was going to be hurt very badly or die” was reported more often. Additionally, Kerig et al. (2009) found that girls endorsed higher rates of exposure to interpersonal trauma when compared with boys, as well as more depression, anxiety, somatic complaints, and suicidal ideation. Substance

use disorders (e.g., alcohol use disorder and combined alcohol and drug use disorder) were also found to significantly increase girls' odds of having PTSD (Abram et al., 2007).

Age

Teplin et al. (2002) explored age as a variable in juvenile justice research by looking at the prevalence of mental health disorders in juvenile justice youth under the age of 13. Results indicated that younger youth reported less mental health symptomology and therefore met diagnostic criteria less often, when compared to older youth. Similarly, Abram et al. (2004) explored the prevalence of youth who met criteria for PTSD based upon age. Results indicated that 6.8% of boys aged 10–13 years and approximately 12% of boys aged 14 or more years, met criteria. Additionally, 13% of girls (aged 10–13) and approximately 30.7% of older girls (aged 14+) met criteria. Similar to the increased involvement of girls in the juvenile justice system described above, younger juvenile justice youth have been identified as a relatively new population in need of further research. Additionally, there appear to be differences in the determination of upper age limits for juveniles (e.g., 18, 21, 24) in a number of studies reviewed thus far. In regards to Echo Glen residents, “juvenile life” is considered to be up to 21 years of age, at which point residents are transferred to the adult Department of Corrections (DOC) to complete the remainder of their sentence.

Ethnicity

Previous studies have explored the role of ethnicity in juvenile justice involvement, trauma exposure, and the prevalence of mental health conditions. Teplin et al. (2002) specifically reported utilizing the Spanish version of the DISC with

interviewees. While the prevalence of most disorders were found to be highest in non-Hispanic whites, the authors acknowledged the fact that over half of youth in their juvenile justice population were ethnic minorities, in particular African-American or Hispanic. As such, it was reported in this study that the majority of detained youth with mental health conditions were ethnic minorities, while white youth had a higher prevalence of mental health issues overall.

Research regarding the disproportionate number of minority youth involved in the juvenile justice system has been explored in Washington State as well. In 2011, the Department of Social and Health Services (DSHS) released data illustrating a disproportional representation. Youth of color aged 10–19 represented 39% of the general population and 55% of youth involved in JRA. Most notably, African-American youth had the highest percentage of disproportional representation (19% in JRA and 5% in general population) and White, non-Hispanic, and Asian youth were represented at a higher level in the general population, when compared to JRA residents (61% white, 8% Asian in general population and 45% white, 4% Asian in JRA).

In exploring exposure to specific traumas based upon ethnicity, Abram et al. (2004) utilized the DISC-IV, based on DSM-IV PTSD criteria. Results indicated that among girls, 85.8% of African-Americans, 76.8% of non-Hispanic whites, and 81.6% of Hispanics reported experiencing any trauma assessed in this study. Among boys, 94% of African-Americans, 89.8% of non-Hispanic whites, and 90.8% of Hispanics reported experiencing any trauma assessed in this study. African-Americans of both genders had the highest prevalence of witnessing (e.g., seeing or hearing) someone badly hurt or killed in real life (boys = 76%, girls = 65.2%). The disproportionate number of ethnic

minorities involved in the juvenile justice system and the endorsement of exposure to different trauma experiences based upon ethnicity warrant further consideration as well.

Committing Offense

Committing offense, as it pertains to trauma exposure in juvenile justice youth, appears to be one area with relatively limited resources and information. One study conducted by Snyder (2004) specifically explored committing offense, as it related to the need for mental health and other treatment interventions within the juvenile justice system, to prepare youth for re-entry into the community. Committing offense in relation to trauma exposure is another area in need of further exploration. This area has been included as a variable of interest because this researcher has hypothesized, based on previous literature on gender and trauma exposure, that those youth adjudicated for sexual crimes (e.g., prostitution, rape, sexual assault) would endorse more exposure to sexual traumas and youth adjudicated for violent crimes (e.g., murder, assault, weapons charges) would endorse more exposure to physically assaultive trauma. While the literature on gender and juvenile justice has informed this researcher's thinking process, it is also important to acknowledge that the aforementioned crimes have been committed across genders, which is another reason that exploring committing offense as a demographic variable is relevant.

Fox, Perez, Cass, Baglivio, and Epps (2015) conducted a study to identify whether juveniles who committed serious, violent, and chronic offenses (SVC's) could be predicted based upon their scores on the Adverse Childhood Experiences (ACE) questionnaire. This study aimed to understand the impact of childhood trauma and adverse experiences, in relation to youth becoming a serious, violent, and chronic

offender. Participants included 22, 575 Florida-based youth, who aged out of the juvenile justice system between January 1, 2007, and December 31, 2012. The authors defined a juvenile as an SVC offender when they had at least three felony referrals, with one or more classified as a violent offense. The scores of these offenders were compared with juveniles entering the system due to a non-violent felony, identified as one-and-done offenders (O&D). The authors utilized information provided from the youth's criminal record, results from the Positive Achievement for Change Tool (PACT), which measures the youth's risk for recidivism, as well as identifies areas of focus for rehabilitation. Specific questions on the PACT were used to identify whether a youth endorsed either the presence or absence of trauma exposure, abuse, or adversity items on the ACE. Results indicated that those youth classified as SVC offenders endorsed a higher number of ACE events and overall ACE composite scores. Specifically, SVC offenders had more than double the amount of total ACE events and endorsed experiencing six or more ACE types at a rate three times higher than O&D offenders. The authors concluded that ACE score could be used to predict the likelihood of a youth becoming an SVC offender. Even when controlling for other risk factors, each adverse experience was found to increase a youth's risk of becoming an SVC by more than 35%. The ACE's that increased this risk the most were physical abuse (increased risk by 58%) and having a family member who was also incarcerated (increased risk by 119%). One strength of this study included the large sample size of youth, which allowed for comparable sample sizes in the SVC and O&D groups. A threat to internal validity involved the reliance on memory, as some participants were older adolescents, who were asked to provide information about early childhood experiences. This research showed that scores obtained on the ACE

questionnaire could be used to predict the likelihood of becoming a serious, violent, and chronic offender, for the juvenile justice youth participating in this study.

Co-Occurring Diagnoses

A number of studies have addressed the presence of co-morbid mental health diagnoses in the juvenile justice population. In particular, those disorders that frequently co-occur with PTSD include anxiety, depression, and substance use (Abram et al., 2007; Shufelt & Cocozza, 2006; Teplin et al., 2002). Teplin et al. (2002) found that nearly two-thirds of boys and three-quarters of girls met diagnostic criteria for one or more mental health disorders; nearly 60% of boys and more than two-thirds of girls met diagnostic criteria and had impairments specific to one or more mental health disorders; and almost half of all boys and girls had a substance use disorder. Similarly, Shufelt and Cocozza reported that 70.4% of boys and girls met criteria for at least one mental health disorder. Furthermore, 79% of youth who met criteria for one mental health disorder met criteria for two or more, with over 60% of youth diagnosed with three or more mental health conditions. Abram et al. looked specifically at affective, anxiety, behavioral, and substance use disorders in juvenile justice residents. Results indicated that 93% of youth with PTSD also had at least one co-morbid psychiatric disorder, compared to those without PTSD (64%); over half of the youth with PTSD had two or more co-morbid disorders, and 11% with PTSD had all four disorders. Co-morbid diagnoses in the juvenile justice population have a high prevalence rate, which is why this area has been included in the present study.

Echo Glen

As of April 2013, upon arrival at Echo Glen, all residents were administered the Global Appraisal of Individual Needs-Short Screen (GAIN-SS), to identify youth requiring more thorough assessment of substance use or mental health disorders; the Massachusetts Youth Screening Instrument, Version 2 (MAYSI-2), to measure symptoms on seven scales including emotional, behavioral, or psychological disturbances; the Suicide and Self-Harm Screen (SSS), to assess self-harm or suicidal ideation; and a detailed Client History Review (CHR), which included information from collateral contacts and youth records and files (e.g., court, detention, educational). Within seven to fourteen days, youth were screened utilizing the more thorough Voice-Diagnostic Interview Schedule for Children (V-DISC) (see Measures section below).

The purpose of this archival research study was to examine secondary data, in order to describe the relationships among demographic characteristics and trauma symptomology in juvenile justice residents entering Echo Glen. Research identified to date which has involved the residents of Echo Glen incorporated the following topics: the efficacy of the Integrated Treatment Model (ITM)/evidence based-treatment program, Dialectical Behavioral Therapy (DBT) (Trupin, Stewart, Beach, & Boesky, 2002); the rate of recidivism for returning residents (Washington State Institute for Public Policy, 2006); the rate of disproportionate minority contact and confinement (Department of Social and Health Services, 2011); and the Prison Rape Elimination Act (Department of Juvenile Justice and Delinquency Prevention, 2012; B. Bergan, personal communication, June 30, 2012). However, exploring the types of trauma symptoms in youth entering treatment at Echo Glen, in relation to specific demographic characteristics, had yet to be

investigated. Furthermore, in conducting a preliminary literature review and informal observations of research, a number of studies explored similar concepts within juvenile justice populations of the Midwest, Northeast, and Southeast. Data with West Coast populations and Washington State in particular, appeared to be limited. As a result, it was determined that an exploration of how such demographic characteristics related to trauma symptomology endorsed by incoming Echo Glen residents, would fill a gap in current literature.

Preliminary hypotheses were as follows:

1. There will be a difference in trauma symptomology endorsed by boys and girls.
2. There will be a relationship between age and trauma symptomology, in that older residents will endorse more trauma symptoms than younger residents.
3. Different trauma symptoms will be endorsed by those who identify with different ethnicities.
4. There will be a relationship between committing offense and trauma symptomology in Echo Glen residents.
5. There will be a relationship between trauma symptoms and co-morbid mental health diagnoses, in that some residents with trauma symptomology will also have other mental health diagnoses.

The primary research question was: how do demographic characteristics relate to trauma symptomology in youth entering treatment at Echo Glen?

Chapter III: Method

Demographic characteristics were defined and described including gender, age, ethnicity, committing offense, and mental health diagnoses. Trauma symptomology was defined and described by trauma symptoms listed for endorsement on the PTSD module of the V-DISC assessment tool. The frequency and type of trauma exposures were also examined, as opposed to only the number of symptoms affirmed. A correlational research design was used to explore the relationships among the aforementioned sample variables based on archival data. The primary focus was on exposure to trauma, resulting symptomology, and demographic characteristics, with the identification and acknowledgement of co-morbid mental health diagnoses.

Setting

Echo Glen Children's Center is a residential institution funded by the Juvenile Rehabilitation Administration (JRA) division of the Washington State Department of Social and Health Services (DSHS). Echo Glen opened in 1967 in order to provide support for troubled youth and over the years, transitioned to deliver services solely for juvenile justice-involved youth. Washington State's highest-risk youth are sentenced for commitment into JRA custody by county juvenile courts across the state (Department of Social and Health Services, 2009). As of April 2013, Echo Glen incorporated 13 living units, with 10 in operation, which housed up to 16–20 juvenile offenders apiece. Residents were assigned to a living unit based upon gender, committing offense, and treatment needs (e.g., substance abuse, sex offenses, mental health, anger management, and maximum security). Medical, dental and psychiatric services were provided on-campus and youth attended the on-campus school, which was staffed by teachers from

the local Issaquah School District. Recreational opportunities included football, baseball, and soccer fields, a Ropes Course, a rock-climbing wall, gymnasium, pool, and Canine Connections dog-training program. Residents received behavioral-based treatment/therapy and educational services throughout their commitment. Echo Glen specifically housed a unique and specialized medium and maximum security juvenile justice population: the youngest juvenile offenders in the state of Washington and the only residential treatment facility for adjudicated girls in the state of Washington. In addition, Echo Glen was a Juvenile Rehabilitation Administration (JRA) mental-health designated treatment facility, which also housed medically fragile and small-in-stature boys over the age of 15 and girls up to 21 years of age who were sentenced under the Department of Corrections (DOC) (Department of Social and Health Services, 2009).

Measures

Demographic and juvenile justice information. Demographic characteristics for the sample population, which included gender, age, ethnicity, committing offense, and mental health diagnoses were accessed and obtained through the Juvenile Rehabilitation Administration (JRA) computerized database.

Voice-diagnostic interview schedule for children (V-DISC). The V-DISC is the voice format of the Diagnostic Interview Schedule for Children-IV (DISC-IV). The V-DISC screening tool has been used in a variety of juvenile justice settings to identify youth at risk for psychiatric conditions. Permission and approval were secured from the administration at Echo Glen, as well as researchers at Columbia University, who created the Voice-Diagnostic Interview Schedule for Children (V-DISC), to utilize archived V-DISC-generated data from Echo Glen Children's Center.

The V-DISC is a structured interview that uses DSM-IV criteria to screen for more than twenty mental health disorders. It is self-administered by youth, who hear questions through headphones, while reading them on a computer screen, and then respond via computer keyboard. A third-grade oral English comprehension level is required (Hayes, McReynolds, & Wasserman, 2005; McReynolds et al., 2007; New York State Division of Criminal Justice Services, 2012). The V-DISC has been classified as a screening tool because a follow-up assessment is both needed and required to confirm a diagnosis (Vincent, 2011). Yet, due to the amount of time that administration of this measure lasted for residents at Echo Glen, the V-DISC has been considered an assessment tool for the purposes of this archival research study. Such a distinction was made because assessments provide more detailed information regarding mental health status and needs and require a longer administration time when compared to screening tools.

Research exploring the efficacy, reliability, and validity of the V-DISC tool with juvenile justice populations has explored the rates of self-injury and traumatic experiences in incarcerated girls, the prevalence of psychiatric disorders in incarcerated boys, and the comparability and concordance with the paper and voice format of the Massachusetts Youth Screening Instrument-2 (MAYSI-2) and DISC Predictive Scales (DPS). Even in preliminary studies, the rates of disorders identified by the V-DISC were found to be comparable to other diagnostic screening tools (Hayes et al., 2005; McReynolds et al., 2007; New York State Division of Criminal Justice Services, 2012; Wasserman et al., 2002). Additionally, Hoeve, McReynolds, and Wasserman (2015)

described the test-retest reliability of the DISC-IV as comparable to previous versions of the DISC instrument.

Wasserman et al. (2002) utilized the V-DISC to determine the accuracy of assessing psychiatric disorders in juvenile justice boys, within a self-report, structured interview format. Over a period of one year, 292 boys incarcerated in New Jersey and Illinois were interviewed. Results indicated that the youth were able to sustain attention and focus, in order to complete the computerized, self-report format for the duration of the assessment. Additionally, the prevalence of mental health disorders was consistent with numbers reported through previous studies utilizing the Diagnostic Interview Schedule for Children (DISC), non-voice format. Strengths of this study included initial findings for validity of the V-DISC format and clearly stated exclusion criteria. One threat to internal validity identified by the authors included a small sample size (N = 292). One external validity threat included the fact that all participants were boys, from two specific geographic areas. This study developed the foundation for determining the validity of the Voice-DISC format for assessing mental health diagnoses in boys within this sample.

McReynolds et al. (2007) investigated correlations between the DISC Predictive Scales (DPS) and the V-DISC instruments for identifying the mental health needs of juvenile justice youth incarcerated in South Carolina. Interview results were compared for agreement between the DPS and V-DISC, to determine the ability of the DPS to correctly identify mental health diagnoses. The majority of youth (over 90% of the total sample size, N = 195) completed both instruments within two months of intake. Results demonstrated the accuracy of the DPS as a screen for V-DISC diagnostic cluster

disorders. Strengths of this study included a thorough limitation section and literature review on previously utilized screening instruments with juvenile justice youth. One threat to internal validity involved the oversampling of girls (due to a lower prevalence in the juvenile justice system in general), in order to achieve a more equally gendered sample size. Additionally, 300 youth were originally identified, of whom 32 were excluded, and of the final 268 youth, only 195 completed both measures. Compared to the aforementioned Wasserman et al. (2002) study, this final sample size was even smaller. This study was the first to support the use of the DPS as a screen for identifying mental health conditions in juvenile justice youth, as previous research centered on community samples of youth.

Wasserman et al. (2002) and Wasserman and McReynolds (2011) have explored the efficacy of using the V-DISC with juvenile justice youth. Information about current mental health diagnoses was generated for disorders that were present over the preceding month. Additionally, specific disorder clusters (e.g. ADHD, Substance Use Disorder, and Conduct Disorder) also assess/inquire for symptom prevalence within the last six months, one-year, and throughout the lifetime, as consistent with DSM-IV-TR criteria (Wasserman et al., 2002). The potential for limited self-report accuracy and reliability is an important consideration when working with juvenile populations, especially without corroboration from additional sources. Utilizing a self-report measure that relies on personal insight, social skills and judgment ability, and awareness of actions and consequences, may be challenging for juvenile justice youth (Wasserman, Ko & McReynolds, 2004). Yet, youth have reported comfort and ease with the self-report computerized format, as well as more honest responses, when compared to other

interview formats (McReynolds et al., 2007; Wasserman et al., 2002). The V-DISC has been especially well suited for juvenile justice environments, as the computerized/self-administered format was found to be useful when conducting simultaneous screenings of youth. As juvenile justice settings frequently have limited resources, the ability to work with multiple youth at the same time reduced both resident time and staff workload. Furthermore, the third-grade oral English comprehension level facilitated the use of such a screening tool with populations who often have varying ranges of reading and comprehension ability.

Participants

This study sample consisted of those juvenile justice residents admitted to Echo Glen Children's Center between February 11, 2011, and June 30, 2014. Such a timeframe was specified because Echo Glen first began utilizing the Voice Diagnostic Interview Schedule for Children (V-DISC) in February of 2011. The target sample included Caucasian, African-American, Native American, Hispanic, Asian, Mixed-Race, and Other Race boys and girls, between the ages of 10 and 18. Data from a total of 473 youth was analyzed in this study. After completion of the data cleaning process, 466 youth were included in the initial analysis, in order to determine trauma exposure. See Table 1 below, for demographic data for all participants (N = 466). After identifying those youth who specifically endorsed exposure to trauma, 379 youth were included for final analysis (see Table 3) in order to explore trauma symptomology. The median age of participants in the full sample was 14.5, the modal gender was male, the modal ethnicity was Caucasian, the modal committing offense was property offense, and the modal co-morbid mental health diagnosis was disruptive behavior disorder.

Table 1

Demographics of the Sample

<u>Variable</u>	<u>Sample</u> (n = 466)	
	<i>N</i>	<i>%</i>
Gender		
Boys	332	71.2
Girls	134	28.8
Age		
13 & under	76	16.3
14	157	33.7
15	141	30.3
16	46	9.9
17 & above	46	9.9
Ethnicity		
Caucasian	213	45.7
African American	65	13.9
Native American	18	3.9
Hispanic	66	14.2
Mixed	82	17.6
Other Race	21	4.5
Committing Offense		
Drug	13	2.8
Property	243	52.1
Interpersonal	210	45.1
Mental Health Diagnosis		
Affective Disorders	64	13.7
Disrup. Behavior Disorders	136	29.2
Any Substance Disorder	61	13.1
Any Anxiety Disorder	52	11.1
Other Mental Health Dis.	46	9.9
Mental Health Disorder	209	44.8

Procedure

For performance-based standards and outcome measurement at Echo Glen Children's Center, all new residents were to be interviewed with the V-DISC tool within seven days of intake. However, due to limited resources, staff availability, and large numbers of youth entering Echo Glen at certain times of year, some residents were

interviewed within two weeks or more of entry, as opposed to one week. All eligible participants for the current study were interviewed within one month of intake/date-of-entry into Echo Glen. This timeframe was specified in order to maximize sample size and increase variability in the sample pool. Those residents interviewed outside of the one-month, post-entry date have been excluded from this study, as well as those residents who did not complete the entire screening due to scheduling conflicts and/or disruptive, dysregulated behavior. Within the timeframe of this study for any rescinding residents, only first offense V-DISC information was utilized.

V-DISC Administrators received a list of all youth names, living units and dates of intake for the preceding week, which determined the order in which youth were assessed. Residents were met by one of three V-DISC-trained administrators, in a private office or area in the youth's living unit. The administrator was responsible for setting up the computer/laptop, entering in resident name and date, as well as preparing the headphones and sound volume. Operation of the computer program was then explained to the resident and any questions were answered. The administrator remained either inside the room or nearby, in order to assist the youth and answer questions at any time, while also ensuring privacy. While the V-DISC can be completed in a one-hour timeframe in community samples, with a sample such as Echo Glen, which has residents with a high prevalence of mental health conditions and delayed cognitive ability, administration was found to take anywhere from ninety minutes to three hours (Fisher, Lucas, Lucas, Sarsfield, & Shaffer, 2006; B. Bergan, personal communication, November 15, 2012). Test administration therefore varied with involvement from, and level of assessment familiarity of, the administrator. For example, remaining in the room

to monitor and offer assistance also provided an opportunity to check-in with the resident, validate their focus and persistence, and acknowledge the length of time (up to three hours) that was sometimes required for completion. Additionally, at the outset and if requested at any point by the youth, periodic check-ins were offered to provide feedback on how many sections had been completed or were left to complete. In this researcher's personal experience, such administration standards helped many residents to sustain focus for a longer period, in order to complete all modules. After the youth completed all questions, the administrator saved the results to the V-DISC computer. After all youth were met with for the day, the administrator printed out individual reports and delivered them to the on-site psychologist for review and further follow-up (see Appendix B for the complete V-DISC PTSD module).

Securing confidential data. All youth demographic data was de-identified by Juvenile Rehabilitation Administration staff, prior to disclosure of information to the primary researcher. An arbitrary number was assigned to each youth, which was used to match V-DISC assessment results and demographic data.

Data Analysis

Data consisted of predictor variables/demographic characteristics (gender, age, ethnicity, committing offense, and mental health diagnoses) for all study participants, as well as criterion variables/trauma symptomology endorsed on the V-DISC PTSD module for those youth who reported exposure to trauma. Co-morbid mental health diagnoses obtained from demographic information have also been described. The primary researcher reviewed demographic data for multiple admit dates, excluding those dates outside of the original study time frame of 2/11/11 to 4/30/13. Seventy-three youth were

identified in demographic data provided by DSHS, with admit dates between 4/30/13 and 6/30/14. To increase sample total from 400 to 473, approval was sought and gained from Antioch University Seattle's Institutional Review Board and study time frame was revised to 2/11/11 to 6/30/2014. Admit dates were then reviewed for each youth, to identify corresponding committing offense and date of initial administration of the V-DISC assessment. V-DISC administration dates were also reviewed to ensure administration timeframe and 25 repeat offenders, with multiple assessment dates, were identified. The first assessment date listed was utilized for these youth, as Dr. Larkin McReynolds confirmed the order of listed assessment dates as matching with first commitment date on the demographic data files from DSHS. Data were double checked for accuracy of data entry and exclusion variables, by reviewing hard copy and electronic copy of data and then cross-referencing each entry. Demographic data was then entered into the SPSS program for analysis and was verified by a research assistant to ensure accuracy. The primary researcher followed guidelines in Mertler and Vannatta (2010) for pre-analysis data screening to check for missing data and outliers, through the use of descriptive analysis and frequency graphs. As acknowledged in "Outliers and Anomalous Data," (n.d.), due to the fact that many participants endorse the same classification when categorical variables are involved, outliers and atypical data/responses do not typically occur. For all variables indicating fewer than 20 youth per classification, categories were then collapsed and grouped together (as further described below in the outliers section).

Missing data. Demographic and trauma symptomology data were scanned for missing values and cross-referenced for typos with the help of two research assistants.

Two cases were deleted due to missing demographic data and four were deleted due to missing V-DISC data. One case was deleted due to a date of entry to Echo Glen prior to V-DISC usage (in 2010). Typos were corrected as needed.

Outliers. Univariate outliers were examined with frequency distributions. Several outliers were identified and recoded according to the procedures outlined in Mertler and Vannatta (2010) to correct extreme values (fewer than 20 youth per category).

Transformations for both original and recoded variables were attempted and evaluated side by side. Retained variables were those that exhibited the most normal distribution for each of the corresponding constructs (see Table 2). Age, ethnicity, committing offense, mental health diagnoses, and trauma symptoms were recoded into fewer groups, due to small sample endorsement (less than 20 youth). For age, 10, 11, 12, and 13 were collapsed into “13” (13 and under) and ages 17 and 18 were collapsed into “17” (17 and above). For ethnicity, Asian was collapsed into “Other Race” and Unreported was recoded as “Missing.” For committing offense, 76 variables were collapsed into categories based on Washington State Revised Code of Washington (RCW) categories for Juvenile Offender Sentencing Standards. Following this initial recode, due to a small sample size in nine of the recoded variables, committing offenses were collapsed again into “drug offense,” “property offense,” and “interpersonal offense,” using criteria previously established in studies conducted with juvenile justice youth (L. McReynolds, personal communication, August 6, 2015). Inter-rater reliability (IRR) was completed for both phases of committing offense recodes, by training another coder on criteria for each category (IRR for initial recode per Washington State RCW categories for Juvenile Offender Sentencing Standards = 97.4%; IRR for final recode of property, drug, and

interpersonal offense clusters = 100%). Both results indicated a high degree of agreement between coders. For mental health diagnoses, 50 distinct mental health diagnoses were collapsed into cluster variables, using criteria previously established in studies conducted with juvenile justice youth (L. McReynolds, personal communication, August 6, 2015). Due to youth having anywhere from zero to eight mental health diagnoses, each variable was collapsed into clusters. Diagnoses that did not fit into pre-existing clusters were categorized as “other mental health diagnosis.” For any youth with more than one diagnosis in a cluster, numbers (ranging from two to five) were manually changed to a “1” to represent affirmative for diagnosis. Additional clusters with less than 20 cases were further collapsed into “other MH disorder,” which was only applicable to the Learning Disorder diagnoses. Inter-rater reliability was completed for mental health recodes, by training another coder on criteria for each category (IRR for MH Clusters = 96.3%). Results indicated a high degree of agreement between coders. For trauma symptoms, 25 distinct trauma symptoms were identified and recoded, based on DSM-IV-TR categories of the three main symptom clusters (arousal, avoidance and numbing, and re-experiencing) for PTSD. For any case with more than one trauma symptom in a cluster, numbers (ranging from two to eight) were manually changed to a “1” to represent affirmative for the symptom cluster.

Table 2

Variable Transformations

Original Variable	Recoded Variable
Gender	Original Variable Retained
Age	Age_Recode
Ethnicity	Ethnicity_Recode
Committing Offense	CommitOff_3Cat
Mental Health Diagnosis	MH Clusters
Trauma Symptoms	Trauma Clusters

To assess multivariate outliers, Mahalanobis' Distance was calculated. The critical value for chi-square (χ^2) was 27.88 when $p = .001$, with 9 degrees of freedom (variables: gender, age, ethnicity, committing offense, affective disorders, disruptive behavior disorders, any substance disorder, any anxiety disorder, and other mental health disorder). Based on this result, five cases were identified ($\chi^2 = 37.49928$, $\chi^2 = 36.13032$, $\chi^2 = 32.62369$, $\chi^2 = 32.42841$, and $\chi^2 = 30.89840$) and removed from further logistic regression analysis ($N = 374$). A preliminary multiple linear regression was completed, to evaluate multicollinearity among predictor variables. The table of regression coefficients indicated that multicollinearity was not a concern, as tolerance statistics for all independent variables was greater than 0.1.

V-DISC module symptoms were analyzed using the Statistical Analysis Software (SAS) Version F algorithms, to determine whether the hypotheses were supported. Algorithms were obtained from Columbia University and the research team at Columbia University's Center for the Promotion of Mental Health in Juvenile Justice scored the de-identified V-DISC data. Univariate analyses were conducted first, in order to describe the demographic characteristics of this sample, including gender, age, ethnicity, committing offense, and mental health diagnoses. A bivariate analysis of trauma exposure, trauma symptomology, and individual demographic characteristics was conducted, in order to explore any relationships between pairs of variables. Exposure to trauma and resulting symptomology were examined as related to gender, age, ethnicity, and committing offense. Co-occurring mental health diagnoses were also described and

discussed. Both nominal-level data (gender, ethnicity, committing offense, and mental health diagnoses) and interval-level data (age) were used as predictors.

Logistic regression. A logistic regression analysis was used to test whether differences in gender, age, ethnicity, committing offense, and co-morbid mental health diagnoses would predict trauma symptom endorsement. Trauma symptoms (arousal, avoidance/ numbing, and re-experiencing) served as the criterion variable. Demographic characteristics (gender, age, ethnicity, committing offense, and mental health diagnosis) served as the predictor variables. Three categorical variables, ethnicity (Caucasian or Not), committing offense (Property or Not/ Drug or Not/ Interpersonal or Not), and mental health diagnosis (Affective Disorder or Not/ Disruptive Behavior Disorder or Not/ Any Substance Disorder or Not/ Any Anxiety Disorder or Not/ Other Mental Health Disorder or Not) were recoded to reflect a binary (yes/no) response, as outlined by Mertler and Vannatta (2010) and Pallant (2013). Because the criterion variable, trauma symptomology on the V-DISC, was represented by a dichotomous outcome (yes/no) for disorder presence, a logistic regression analysis was conducted. According to recommendations made by Wright (1995), at least 50 subjects to one predictor variable is adequate for hypothesis testing; therefore, the variable “Caucasian or not” was the only ethnicity category included for final logistic regression analysis. Predictions were then made as to how the odds varied for youth endorsement of trauma symptoms, based upon different demographic characteristics.

Chapter IV: Results

Descriptive Statistics

Trauma exposed youth. Demographic data for trauma-exposed youth was presented in Table 3. In the sample overall, three hundred and seventy-nine youth (81.3%) endorsed any trauma exposure on the V-DISC tool. The median age of trauma-exposed youth was 15, the modal gender was male, the modal ethnicity was Caucasian, the modal committing offense was property offense, and the modal co-morbid mental health diagnosis was disruptive behavior disorder.

Table 3

Demographic Characteristics of Trauma Exposed Youth

<u>Category</u>		<u>Sample</u>		(proportion of original sample exposed to trauma)
		(n = 466)		
		<i>N</i>	%	
Any Exposure Trauma Event		379	81.3	
Gender	Boys	258	68.1	77.7 (258/332)
	Girls	121	31.9	90.3 (121/134)
Age	13 & under	57	15.0	75.0 (57/76)
	14	123	32.5	78.3 (123/157)
	15	116	30.6	82.3 (116/141)
	16	41	10.8	89.1 (41/46)
	17 & above	42	11.1	91.3 (42/46)
Ethnicity	Caucasian	181	47.8	85.0 (181/213)
	African American	49	12.9	75.4 (49/65)
	Native American	16	4.2	88.9 (16/18)
	Hispanic	49	12.9	74.2 (49/66)
	Mixed	68	17.9	82.9 (68/82)
	Other Race	15	4.0	71.4 (15/21)
Committing Offense	Drug	10	2.6	76.9 (10/13)
	Property	196	51.7	80.6 (196/243)
	Interpersonal	173	45.6	82.4 (173/210)
Mental Health Diagnosis	Affective Disorders	59	15.6	92.2 (59/62)
	Disrup. Behavior Disorders	112	29.6	82.4 (112/136)
	Any Substance Disorder	53	14.0	86.9 (53/61)
	Any Anxiety Disorder	45	11.9	86.5 (45/52)
	Other Mental Health Dis.	36	9.5	78.3 (36/46)
	Mental Health Disorder	172	45.4	82.3 (172/209)

Trauma exposure type. The most frequently endorsed type of trauma event was “other injury or shocking event” (N = 311), followed by “assault” (N = 290), “non-sexual

assaultive violence” (assault with a weapon) (N = 272), “forced sexual activity” (N = 97), and “only natural disaster” (N = 11) (see Table 4 below).

Table 4

Trauma Exposure

<u>Variable</u>	<u>Sample</u> (n = 379)	
	N	%
Assault	290	76.5
Other Injury/Shocking Event	311	82.1
Forced Sexual Activity	97	25.6
Non Sexual Assaultive Violence	272	71.8
Only Natural Disaster	11	2.9

Number of trauma exposures. The number of traumatic events endorsed by trauma-exposed youth ranged from one to eight. The median number of traumatic events experienced was three and 3.52 the mean (see Table 5 below).

Table 5

Number of Trauma Exposures

<u>Variable</u>	<u>Sample</u> (n = 379)	
	N	%
1	73	19.3
2	57	15.0
3	65	17.2
4	63	16.6
5	56	14.8
6	41	10.8
7	17	4.5
8	7	1.8

Trauma symptoms. The most frequently endorsed trauma symptoms were avoidance and numbing (N = 75), followed by re-experiencing (N = 72), and arousal

($N = 52$). Out of 379 trauma exposed youth, slightly over half (199), endorsed experiencing trauma symptoms (see Table 6 below).

Table 6

Trauma Symptoms

<u>Variable</u>	<u>Sample</u> ($n = 379$)	
	<i>N</i>	%
Avoidance and Numbing	75	19.8
Re-experiencing	72	19.0
Arousal	52	13.7
	N=199	52.5

Inferential Statistics

Age. Pearson Correlation revealed a small, positive correlation between age group and number of trauma symptoms ($r = .156$, $n = 378$, $p = .002$), accounting for 2.4% of the variance. Results of a scatter plot indicated a very low, positive correlation. This finding demonstrated that older residents endorsed slightly more trauma symptoms than younger residents. Of note, while a significant result was obtained ($p = .002$), Pallant (2013) acknowledged the fact that very small correlations may reach statistically significant levels when large sample sizes are involved. Therefore, it is important to focus on the amount of variance shared and strength of the overall relationship when interpreting meaning and results.

A one-way, between-group analysis of variance (ANOVA) was conducted to further examine the impact of age group on number of trauma symptoms. There was a statistically significant difference at the $p < .05$ level in number of trauma symptoms

across age groups. When the significance value for Levene's test for homogeneity of variances is less than .05, Pallant (2013) suggests to use Welch's Test instead: $F(4, 127.359) = 3.88, p = .005$. The effect size, calculated using eta squared, was .04, indicating a small effect (using Cohen's classification: .01–.05 = small effect) (Cohen, 1992). Post-hoc comparisons using the LSD test indicated a significant difference ($p = .016$) was detected between youth who were 13 and under ($M = 1.46, SD = 3.27$) and youth who were 17 and older ($M = 3.36, SD = 4.97$), as youth 17 years or older reported more trauma symptoms than youth aged 13 and younger. A significant difference ($p = .007$) was detected between youth who were 14 ($M = .80, SD = 2.61$) and youth who were 15 ($M = 2.14, SD = 4.78$), as 15 year olds reported more trauma symptoms than 14 year olds. A significant difference ($p < .001$) was also detected between youth who were 14 ($M = .80, SD = 2.61$) and youth who were 17 and older ($M = 3.36, SD = 4.97$), as youth 17 years and older reported more trauma symptoms than 14 year olds. A significant difference ($p = .039$) was detected between youth who were 16 ($M = 1.61, SD = 3.44$) and youth who were 17 and older ($M = 3.36, SD = 4.97$), as youth who were 17 years and older reported more trauma symptoms than 16 year olds. Per Pallant (2013), these results should also be interpreted with caution, as with larger sample sizes small differences can be statistically significant. Results of a mean plot indicated a non-linear relationship between number of trauma symptoms and age group (see Figure 1 below).

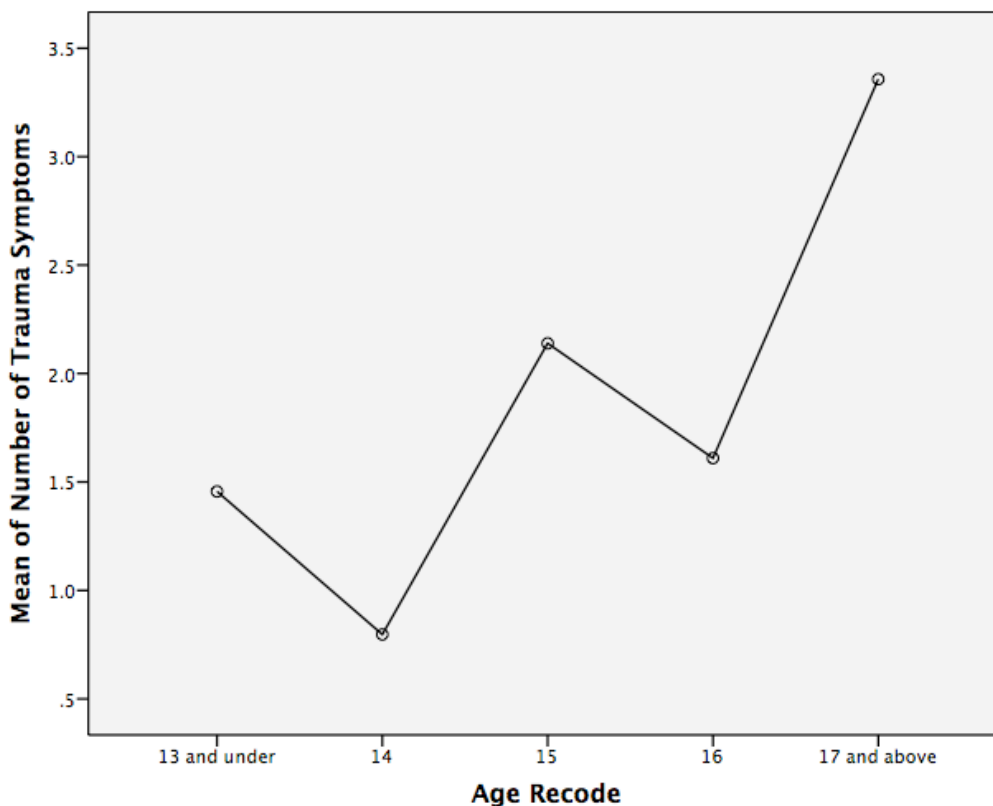


Figure 1. Mean plot for number of trauma symptoms by age group.

Gender. Chi-square test for independence analysis revealed there was an association between gender and the presence or absence of arousal symptoms ($X^2 (1, n = 378) = 24.155, p < .001$). This finding showed a significant difference between the number of boys, $N = 20$ (7.8%) and girls, $N = 32$ (26.4%) endorsing arousal symptoms, in that more girls reported arousal symptoms than boys. There was an association between gender and the presence or absence of avoidance and numbing symptoms ($X^2 (1, n = 378) = 14.963, p < .001$). This finding reflected a significant difference between the number of boys, $N = 37$ (14.4%) and girls, $N = 38$ (31.4%) endorsing avoidance and numbing symptoms, in that more girls reported avoidance and numbing symptoms than boys. There was an association between gender and the

presence or absence of re-experiencing symptoms ($X^2 (1, n = 379) = 20.230, p < .001$). This finding indicated a significant difference between the number of boys, $N = 33$ (12.8%) and girls, $N = 39$ (32.2%) endorsing re-experiencing symptoms, in that more girls reported re-experiencing symptoms than boys (see Table 8 for all chi-square results).

An independent-samples t-test was completed to further observe the relationship between gender and number of trauma symptoms. There was a significant difference in number of symptoms for boys ($M = .99, SD = 3.02$) and girls ($M = 3.13, SD = 5.04$); $t = (161.766) = -4.318, p < .001$ two-tailed) (equal variances not assumed, per results of Levene's Test for Equality of Variances). The magnitude of the differences in the means (mean difference = -2.140, 95% CI: -3.12 to -1.16) was small (eta squared = .047), (using Cohen's classification: .01–.05 = small effect) (Cohen, 1992), as only 4.7% of the variance in the number of trauma symptoms was explained by gender.

A two-way between-groups analysis of variance (ANOVA) was conducted to explore the impact of age group and gender on the number of trauma symptoms endorsed, as reported on the V-DISC. Participants were divided into five groups according to their age (13 and under, 14, 15, 16, and 17 and above). Per Pallant (2013) as the variance of the number of trauma symptoms was found to be unequal across age and gender groups, the significance level was reset at .01 and the two-way ANOVA was run again. The interaction effect between gender and age group was not statistically significant, $F (4, 368) = 1.624, p = .168$. There was a statistically significant main effect for gender, $F (1, 368) = 11.913, p = .001$; however the effect size was small (partial eta squared = .031) (using Cohen's classification: .01–.05 = small effect) (Cohen, 1992).

The main effect for age group, $F(4, 368) = .596, p = .666$, did not reach statistical significance (see Figure 2 below).

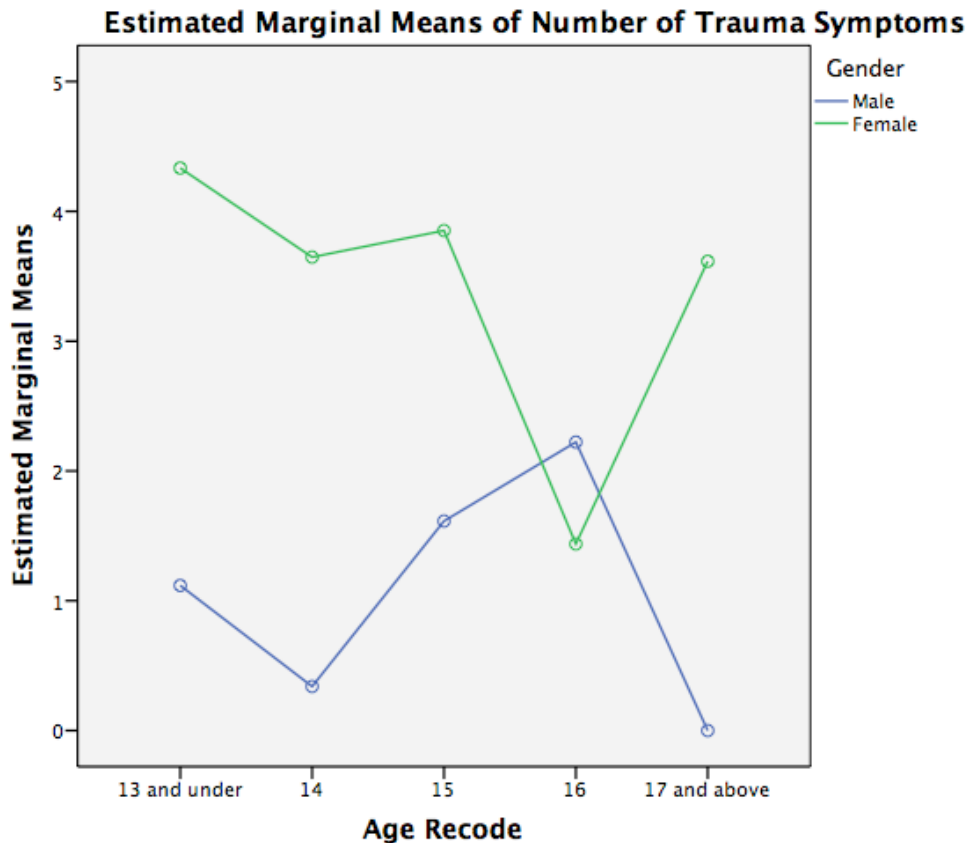


Figure 2. Mean number of trauma symptoms by age group and gender.

Ethnicity. Chi-square test for independence analysis revealed there was no association between ethnicity and the presence or absence of arousal symptoms ($X^2(6, n = 378) = 2.566, p = .861$); there was no association between ethnicity and the presence or absence of avoidance and numbing symptoms ($X^2(6, n = 378) = 1.827, p = .935$); and there was no association between ethnicity and the presence or absence of re-experiencing symptoms ($X^2(6, n = 379) = 2.010, p = .919$) (Likelihood Ratio was utilized, as 4 cells had expected count less than five).

Committing offense. Chi-square test for independence analysis revealed there was no association between committing offense categories (property, drug, and interpersonal) and the presence or absence of arousal symptoms ($X^2 (2, n = 378) = 3.449, p = .178$), the presence or absence of avoidance and numbing symptoms ($X^2 (2, n = 378) = 4.815, p = .090$), and the presence or absence of re-experiencing symptoms ($X^2 (2, n = 379) = 5.608, p = .061$). The Likelihood Ratio was utilized for all committing offense variables, as one cell had an expected count less than 5 (due to only ten youth in the drug offense category).

A chi-square analysis was also used to explore the relationships between committing offense category and type of trauma experienced. There was no association between committing offense category and the presence or absence of other injury or shocking event ($X^2 (2, n = 379) = 3.049, p = .218$), only natural disaster ($X^2 (2, n = 379) = 1.868, p = .393$), assault ($X^2 (2, n = 379) = 4.815, p = .090$), or forced sexual activity ($X^2 (2, n = 379) = 5.271, p = .072$). There was an association between committing offense category and the presence or absence of non-sexual assaultive violence ($X^2 (2, n = 379) = 9.460, p = .009$). This finding indicated a significant difference between the number of drug offenders, $N = 7$ (70.0%), property offenders, $N = 154$ (78.6%) and interpersonal offenders, $N = 111$ (64.2%) who reported experiencing non-sexual assaultive violence, in that more property offenders reported experiencing traumatic events involving non-sexual assaultive violence. The Likelihood Ratio was utilized for all committing offense variables, as one cell had an expected count less than 5 (see Table 7 below).

Table 7

Chi-Square Committing Offense/Trauma Type Significance Values

	<i>Sample (n = 379)</i>				
	Assault	Other Injury	Forced Sex	Assaultive Violence	Natural Disaster
Committing Offense	p = .090	p = .218	p = .072	p = .009	p = .393

Mental health diagnoses.

Affective disorders. Chi-square test for independence analysis revealed there was no association between affective disorders and the presence or absence of arousal symptoms ($X^2 (1, n = 378) = .758, p = .384$); there was no association between affective disorders and the presence or absence of avoidance and numbing symptoms ($X^2 (1, n = 378) = 1.735, p = .188$); and there was no association between affective disorders and the presence or absence of re-experiencing symptoms ($X^2 (1, n = 379) = 1.343, p = .247$).

Disruptive behavior disorders. Chi-square analysis revealed there was no association between disruptive behavior disorders and the presence or absence of arousal symptoms ($X^2 (1, n = 378) = 2.256, p = .133$). There was no association between disruptive behavior disorders and the presence or absence of avoidance and numbing symptoms ($X^2 (1, n = 378) = 3.665, p = .056$). There was no association between disruptive behavior disorders and the presence or absence of re-experiencing symptoms ($X^2 (1, n = 379) = .611, p = .435$).

Any substance disorder. Chi-square analysis revealed there was an association between substance disorders and the presence or absence of arousal symptoms

($X^2 (1, n = 378) = 4.102, p = .043$). This finding indicated a significant difference between the number of youth with a substance disorder, $N = 12$ (22.6%) and youth without a substance disorder, $N = 40$ (12.3%) endorsing arousal symptoms, in that more youth with a substance disorder reported arousal symptoms than youth without a substance disorder. There was an association between substance disorders and the presence or absence of avoidance and numbing symptoms

($X^2 (1, n = 378) = 4.150, p = .042$). This finding indicated a significant difference between the number of youth with a substance disorder, $N = 16$ (30.2%) and youth without a substance disorder, $N = 59$ (18.2%) endorsing avoidance and numbing symptoms, in that more youth with a substance disorder reported avoidance and numbing symptoms than youth without a substance disorder. There was no association between substance disorders and the presence or absence of re-experiencing symptoms

($X^2 (1, n = 379) = 3.467, p = .063$).

Any anxiety disorders. Chi-square analysis revealed there was no association found between anxiety disorders and the presence or absence of arousal symptoms ($X^2 (2, n = 378) = 1.707, p = .426$); there was no association between anxiety disorders and the presence or absence of avoidance and numbing symptoms ($X^2 (2, n = 378) = 1.360, p = .507$); and there was no association between anxiety disorders and the presence or absence of re-experiencing symptoms ($X^2 (2, n = 379) = 1.464, p = .481$). The Likelihood Ratio was utilized, as two cells had an expected count less than 5.

Other mental health disorder. Chi-square analysis revealed there was no association between other mental health disorders and the presence or absence of arousal

symptoms ($X^2 (1, n = 378) = .001, p = .981$) (Likelihood Ratio was utilized as one cell had an expected count less than 5); there was no association between other mental health disorders and the presence or absence of avoidance and numbing symptoms ($X^2 (1, n = 378) = .252, p = .616$); and there was no association between other mental health disorders and the presence or absence of re-experiencing symptoms ($X^2 (1, n = 379) = 1.608, p = .205$).

Table 8

Chi-Square Demographic Characteristics and Symptoms Significance Values

	<i>Sample (n = 379)</i>		
	Arousal	Avoid/Numb	Re-Experience
Gender	p < .001	p < .001	p < .001
Ethnicity	p = .861	p = .935	p = .919
Committing Offense	p = .178	p = .090	p = .061
Mental Health Diagnosis			
Affective	p = .384	p = .188	p = .247
Disruptive Behav.	p = .133	p = .056	p = .435
Any Substance	p = .043	p = .042	p = .063
Any Anxiety	p = .426	p = .507	p = .481
Other MH	p = .943	p = .616	p = .205

Logistic regression analysis. Logistic regression was conducted to determine which independent variables (gender, age, ethnicity, committing offense, and co-morbid mental health diagnoses) were predictive of trauma symptoms (arousal,

avoidance/numbing, and re-experiencing). Out of 379 youth reporting trauma exposure, 374 were included in analysis (although one additional case was missing data for arousal and avoidance and numbing symptoms, however not for re-experiencing symptoms) and five cases were eliminated due to results of Mahalanobis' Distance.

Arousal trauma symptoms. Logistic regression was performed to assess the impact of a number of factors on the likelihood that youth would report symptoms of arousal in relation to trauma exposure. The model contained ten independent variables (age, gender, ethnicity, affective disorder, disruptive behavior disorder, any substance disorder, any anxiety disorder, other mental health disorder, interpersonal committing offense, and property committing offense). The full model containing all predictors was statistically significant $X^2(10, N = 373) = 35.756, p < .001$, indicating that the model was able to distinguish between youth who reported and did not report arousal symptoms. The model as a whole explained between 9.1% (Cox and Snell R square) and 16.6% (Nagelkerke R squared) of the variance in arousal symptoms and correctly classified 86.1% of cases. Results of Hosmer and Lemeshow Test ($p = .696$) indicated that the model was a good fit. As shown in Table 9, two of the independent variables made a unique, statistically significant contribution to the model (gender and disruptive behavior disorder). The Odds Ratio for gender was 3.461, which indicated that girls were 3.5 times more likely than boys to report arousal symptoms, controlling for all other factors in the model. The Odds Ratio for disruptive behavior disorder was 2.224, which indicated that youth with a disruptive behavior disorder diagnosis were 2.2 times more likely than youth without a disruptive behavior diagnosis to report arousal symptoms, controlling for all other factors in the model.

Avoidance and numbing trauma symptoms. Logistic regression was performed to assess the impact of a number of factors on the likelihood that youth would report that they had symptoms of avoidance and numbing in relation to trauma exposure. The model contained ten independent variables (age, gender, ethnicity, affective disorder, disruptive behavior disorder, any substance disorder, any anxiety disorder, other mental health disorder, interpersonal committing offense, and property committing offense). The full model containing all predictors was statistically significant $X^2(10, N = 373) = 28.442, p = .002$, indicating that the model was able to distinguish between youth who reported and did not report avoidance and numbing symptoms. The model as a whole explained between 7.3% (Cox and Snell R square) and 11.6% (Nagelkerke R squared) of the variance in avoidance and numbing symptoms, and correctly classified 79.6% of cases. Results of Hosmer and Lemeshow Test ($p = .443$) indicated that the model was a good fit. As shown in Table 10, two of the independent variables made unique, statistically significant contributions to the model (gender and disruptive behavior disorder). The Odds Ratio for gender was 2.529, which indicated that girls were 2.5 times more likely than boys to report avoidance and numbing symptoms, controlling for all other factors in the model. The Odds Ratio for disruptive behavior disorder was 2.193, which indicated that youth with a disruptive behavior disorder diagnosis were 2.2 time more likely than youth without a disruptive behavior diagnosis to report avoidance and numbing symptoms, controlling for all other factors in the model.

Re-experiencing trauma symptoms. Logistic regression was performed to assess the impact of a number of factors on the likelihood that youth would report that they had symptoms of re-experiencing in relation to trauma exposure. The model contained ten

independent variables (age, gender, ethnicity, affective disorder, disruptive behavior disorder, any substance disorder, any anxiety disorder, other mental health disorder, interpersonal committing offense, and property committing offense). The full model containing all predictors was statistically significant

$X^2(10, N = 374) = 30.306, p = .001$, indicating that the model was able to distinguish between youth who reported and did not report re-experiencing symptoms. The model as a whole explained between 7.8% (Cox and Snell R square) and 12.5% (Nagelkerke R squared) of the variance in re-experiencing symptoms, and correctly classified 81.0% of cases. Results of Hosmer and Lemeshow Test ($p = .942$) indicated that the model was a good fit. As shown in Table 11, only one of the independent variables made a unique, statistically significant contribution to the model (gender). The Odds Ratio for gender was 2.547, which indicated that girls were 2.5 times more likely than boys to report re-experiencing symptoms, controlling for all other factors in the model.

Table 9

Logistic Regression Predicting Likelihood of Arousal Symptoms

	B	S.E.	Wald	df	p	Odds Ratio	95% CI for O.R.
Gender	1.241	.388	10.231	1	.001	3.461	1.617–7.405
Age	.207	.155	1.780	1	.182	1.230	.907–1.667
Caucasian	-.230	.327	.493	1	.483	.795	.418–1.510
Interp_CO	.644	1.112	.336	1	.562	1.905	.215–16.842
Prop_CO	1.072	1.097	.954	1	.329	2.920	.340–25.078
AnyAnx	-.815	.676	1.455	1	.228	.443	.118–1.665
Affect_Dis	-.613	.529	1.346	1	.246	.542	.192–1.526
DisrBx_Dis	.799	.398	4.040	1	.044	2.224	1.020–4.848
Any_Sub	.649	.434	2.237	1	.135	1.914	.817–4.483
OtherMH	.195	.608	.103	1	.748	1.216	.369–4.006
Constant	-6.495	2.570	6.385	1	.012	.002	

Table 10

Logistic Regression Predicting Likelihood of Avoidance and Numbing Symptoms

	B	S.E.	Wald	df	p	Odds Ratio	95% CI for O.R.
Gender	.928	.336	7.632	1	.006	2.529	1.309–4.884
Age	.057	.135	.181	1	.670	1.059	.814–1.378
Caucasian	-.156	.277	.316	1	.574	.856	.497–1.474
Interp_CO	.073	.850	.007	1	.932	1.075	.203–5.685
Prop_CO	.563	.837	.453	1	.501	1.756	.341–9.055
AnyAnx	-.183	.487	.142	1	.706	.833	.321–2.161
Affect_Dis	-.820	.457	3.216	1	.073	.441	.180–1.079
DisrBx_Dis	.785	.330	5.646	1	.017	2.193	1.147–4.190
Any_Sub	.481	.381	1.600	1	.206	1.618	.767–3.413
OtherMH	-.186	.537	.120	1	.729	.830	.290–2.380
Constant	-3.068	2.159	2.020	1	.155	.047	

Table 11

Logistic Regression Predicting Likelihood of Re-Experiencing Symptoms

	B	S.E.	Wald	df	p	Odds Ratio	95% CI for O.R.
Gender	.935	.341	7.523	1	.006	2.547	1.306–4.969
Age	.115	.137	.701	1	.403	1.122	.857–1.467
Caucasian	-.172	.282	.371	1	.542	.842	.484–1.464
Interp_CO	.075	.852	.008	1	.930	1.077	.203–5.720
Prop_CO	.586	.837	.491	1	.484	1.798	.348–9.276
AnyAnx	-.340	.512	.440	1	.507	.712	.261–1.943
Affect_Dis	-.581	.459	1.603	1	.206	.559	.227–1.375
DisrBx_Dis	.488	.344	2.006	1	.157	1.628	.829–3.197
Any_Sub	.541	.390	1.924	1	.165	1.717	.800–3.685
OtherMH	-.648	.647	1.002	1	.317	.523	.147–1.860
Constant	-3.895	2.193	3.154	1	.076	.020	

Chapter V: Discussion

The present study described the youth entering treatment at Echo Glen Children's Center in terms of a variety of demographic variables, in order to gain a better sense of whether the unique characteristics of these residents related to trauma symptomology and exposure. The demographic characteristics of these youth were identified and examined, in relationship to trauma exposure and symptom endorsement, in order to determine if such qualities might be predictive of trauma exposure and symptoms.

Summary of Findings

Descriptive statistics. Similar to previous research, Echo Glen youth endorsed high rates of trauma exposure (81.3%). The literature has shown comparable rates in juvenile justice populations ranging from 80%–95% of youth reporting exposure to at least one trauma event (Abram et al., 2004; Becker & Kerig, 2011; Stimmel et al., 2014; Wasserman & McReynolds, 2011). The majority of youth reporting trauma exposure in this study experienced an “other injury or shocking event” (82.1%), followed closely by “assault” (76.5%), and “non-sexual assaultive violence” (71.8%). One-quarter (25.6%) reported, “forced sexual activity”, with the smallest number of youth reporting “only natural disaster” (2.9%). Comparatively, Wasserman and McReynolds reported that 70.7% juvenile justice youth had experienced a “non-classified traumatic event” and 52.9% of youth experienced “assaultive violence.” Additionally, 87.6% of youth reporting assaultive violence also endorsed other trauma events: 49.7% reported, “nonsexual assault” and 11.1% “forced sexual activity”. Such results appear to display similar patterns as the current study, with other trauma events and assault being most common, followed by non-sexual assault and forced sexual activity. It is possible that

youth in the current study endorsed such a small rate of experiencing a natural disaster due to the fact that such events have historically been uncommon in Washington State.

For trauma-exposed youth in the current study, 19.3% reported experiencing only one event, 15.0% experienced two, 17.2% experienced three, and 16.6% experienced four. Collectively, 68.1% of trauma-exposed youth reported experiencing anywhere from one to four trauma events and almost one-third of youth (31.9%) reported exposure to five or more (with eight being the highest number reported). Comparatively, Abram et al. (2004) found that more than half of their sample had experienced at least six trauma events and Stimmel et al. (2014), reported that almost three-fourths of their sample had experienced at least two trauma events. Additionally, Rosenberg et al. (2014) reported that the average number of trauma events experienced by their study participants was 5.4. In contrast, in the current study three was the median number of trauma events endorsed by trauma-exposed youth and 3.52 the mean. While 81% of youth in the present study reported exposure to trauma, the overall trauma symptom prevalence was quite low (52.5%), when compared to the aforementioned findings from previous research. As discussed in the Implications section, this may be due to the fact that the majority of youth in the present study were younger boys, who may have been less willing to report trauma exposure overall, as well as to endorse symptoms. Furthermore, the current study defined trauma symptoms according to the DSM-IV-TR PTSD diagnostic standards, which provided a specific and narrow range of options for possible trauma symptoms (see Limitations section).

Previous studies have primarily highlighted the varying rates of PTSD found in juvenile justice populations, ranging from anywhere from 3%–50% (Abram et al., 2004;

Abram et al., 2007; McReynolds & Wasserman, 2011; Wasserman & McReynolds, 2011). As opposed to establishing criteria for post-traumatic stress disorder, the focus of the current study was on trauma symptoms experienced and reported. Of the 379 trauma-exposed youth in the present study over half (N=199, 52.5%) reported experiencing trauma symptoms. Such varying symptom and diagnostic rates have been found to be attributable to population demographics, geographic location, and assessment tools utilized.

Bivariate hypotheses. This study demonstrated that there is a relationship between certain demographic variables and trauma symptomology endorsed by new intake residents at Echo Glen Children's Center. Specifically, a difference was found in trauma symptomology endorsed by boys and girls (Hypothesis #1). This hypothesis was supported, as more girls reported experiencing arousal, avoidance and numbing, and re-experiencing symptoms when compared to boys. There was also a significant difference based on gender in the number of trauma symptoms endorsed. Kerig et al. (2009) similarly found that girls scored higher on measures of both simple- and complex-PTSD symptoms, when compared to boys. Additionally, Drerup, Croysdale, and Hoffman (2008) noted PTSD prevalence rates in girls at 41%, compared with 16% in boys. However, Abram et al. (2004) noted that more boys (93.2%) than girls (84.0%) reported exposure to at least one trauma event. While there has been an increase in girls involved in the justice system and research exploring gender differences and trauma symptoms, this topic is still relatively new and has resulted in varying outcomes (Abram et al., 2004; McReynolds et al., 2007; McReynolds & Wasserman, 2011; Snyder, 2004; Teplin et al., 2002; Voisin et al., 2007; Wasserman et al., 2002). The results of the present study are

similar to the outcomes of some previous research studies. Of note and of particular importance regarding girls involved in this study, is the fact that out of 134 girls in the sample population, 121 (90.3%) reported trauma exposure.

In the current study, gender was found to predict the likelihood of arousal, avoidance and numbing, and re-experiencing trauma symptoms. More girls were found to endorse trauma symptoms in all categories, when compared to boys. While there were fewer girls compared to boys in the sample population, the girls were also older, which may have been a contributing factor for reporting more symptoms (see next section below). Additionally, willingness to report trauma exposure and symptoms may have been more prevalent with girls (see Implications section).

A relationship between age range and trauma symptomology was demonstrated, in that older residents endorsed slightly more trauma symptoms than younger residents (Hypothesis #2). This hypothesis was supported, as youth seventeen years and above reported more trauma symptoms than younger age ranges (≤ 13 , 14, and 16 year olds), while 15 year olds reported more trauma symptoms when compared to 14 year olds. This finding was consistent with Abram et al. (2004) and Teplin et al. (2002); both found that in general, younger youth reported fewer mental health symptoms and therefore met diagnostic criteria less often, when compared to older youth. While the presence of younger youth in the juvenile justice system has increased, youth under the age of 13 are still a relatively limited population. While the differences between age groups and the number of trauma symptoms in the present study were minimal, these results are similar to previous research. Interestingly, out of 46 sixteen year olds and 46 youth seventeen and above in the original sample, 89% and 91% respectively reported trauma exposure.

While lower, the trauma prevalence rates for younger youth were still high, when compared to the original sample (13 and below = 75%, 14 = 78%, and 15 = 82%). Such proportions also illustrate the fact that older youth in the current study endorsed more trauma exposure than younger youth.

In examining the types of trauma symptoms endorsed by different ethnicities (Hypothesis #3), no difference was identified. This hypothesis was not supported and there was no additional relationship discovered between ethnicity and the number of trauma symptoms reported. These findings were found to be in contrast to prior research conducted by Abram et al. (2004), which indicated that more African-Americans and Hispanics reported experiencing any trauma, when compared with non-Hispanic whites. Additionally, African-Americans of both genders had the highest prevalence rates of witnessing physical violence or death in real life. With regards to the current study, it is possible that the results are due to the fact that ethnicity was one of the collapsed demographic variables, due to insufficient numbers in the represented categories (as discussed in the study limitations). While the present study did not uncover a relationship between trauma exposure and ethnicity, additional exploration revealed one particularly striking finding: out of 18 Native American youth in the overall sample, 16 (88.9%) endorsed exposure to trauma. High prevalence rates of trauma exposure have also been documented in previous literature for Native American populations (Bassett, Buchwald, & Manson, 2014; Beals et al., 2005).

A relationship between committing offense and trauma symptomology in Echo Glen residents (Hypothesis #4) was not identified for avoidance and numbing, re-experiencing, or arousal symptoms. This hypothesis was not supported, however a

relationship was found between committing offense and the type of trauma experienced. More property offenders reported experiencing traumatic events involving non-sexual assaultive violence than drug or interpersonal offenders. In previous research, Wasserman and McReynolds (2011) noted that boys who committed an interpersonal offense were more likely to report experiencing a forced sexual traumatic event; yet this was not the case for girls, who regardless of offense, reported more forced sexual trauma than boys. The present study did not uncover a relationship between committing offense and symptoms of trauma exposure; however, more property offenders reported exposure to non-sexual assaultive violence. In light of the results of the current study, the higher rate of exposure to non-assaultive violence for property offenders appears to be in line with previous research demonstrating a connection between interpersonal offenses and forced sexual activity. Of note, while there were a low number of drug offenders represented ($N = 10$), ten was pre-established as the cut-off using criteria from previous studies conducted with juvenile justice youth (L. McReynolds, personal communication, January 5, 2016).

A relationship between trauma symptoms and co-morbid mental health diagnoses was demonstrated for certain mental health categories (see below). Some residents endorsing trauma symptomology also had additional mental health diagnoses (Hypothesis #5), which supported the initial hypothesis. Even though no relationship was found between youth endorsing trauma symptoms and anxiety disorders or other mental health disorders, this hypothesis was supported. Of note, while there was a marginal association found for youth with a disruptive behavior disorder ($N = 29$; 25.9%); the significance value of avoidance and numbing symptoms ($p = .056$) was extremely close to the

required $p = .05$. Along these lines, Stimmel et al. (2014) found that in juvenile justice youth, exposure to traumatic events increased the occurrence of PTSD symptoms as well as reactive aggressive behavior, which is similar in presentation to disruptive behavior diagnoses. Shufelt and Coccozza (2006) also discussed the prevalence of mental health disorders in juvenile justice youth and discovered that disruptive behavior disorders and substance use disorders were among the most common. In the current study, having a disruptive behavior disorder diagnosis was found to predict the likelihood of arousal, and avoidance and numbing symptoms, as more youth with a disruptive behavior diagnosis were found to endorse these symptoms, when compared to youth without a disruptive behavior diagnosis. Perhaps the shared symptomology between disruptive behaviors and arousal symptoms (e.g., irritability or outbursts of anger, difficulty concentrating, and hypervigilance) and avoidance and numbing trauma symptoms (e.g., diminished interest in activities, detachment or estrangement, and restricted range of affect), make it difficult to differentiate between trauma and behavioral origins; whereas re-experiencing symptoms and reactions (e.g., acting or feeling as event reoccurring, intense psychological distress at cues, and physiological reactivity to cues) are more noticeable in disruptive behavior disordered youth. Of additional note is the fact that out of 136 youth within the overall population with an disruptive behavior disorder diagnosis, 112 (82%) endorsed trauma exposure.

There was also a connection between youth reporting trauma symptoms and substance use disorders, for arousal and avoidance and numbing, but not for re-experiencing symptoms. Mills et al. (2006) discussed the importance of assessing for the co-morbidity of PTSD and a number of commonly co-occurring disorders, including

substance use. They highlighted the fact that the presence of one of these disorders has been found to greatly increase the likelihood of another. With substance use in particular, they found that one-third of their participants with PTSD also met criteria for a substance use disorder. Brady and Sinha (2005) also reviewed previous research pertaining to the increased incidence of PTSD and substance use disorders. They described a dual relationship between trauma exposure and substance use. The use of substances may occur after trauma exposure, as a self-medicating tool to alleviate symptoms, or before exposure to trauma, as substance use lowers one's inhibitions and may increase exposure to unsafe situations. The association between trauma-exposed youth and substance use in the present study appears to be in agreement with the findings of previous literature. In particular, perhaps youth are using substances as a way to mitigate the symptoms of arousal and to enhance feelings of numbing and avoidance.

Implications

As identified by Copeland et al. (2007), high trauma prevalence rates have been found in community-based youth samples (54% of ages 9–13 and 68.2% of ages 14–16, respectively). The present study explored trauma exposure and symptoms in a unique and specialized population of juvenile justice youth at Echo Glen Children's Center. The results of this study were similar to previous research pertaining to trauma in other nationally representative samples of juvenile justice youth. The presence of high prevalence rates of exposure to traumatic events (81% of the current study sample) was consistent with the results of prior research (Abram et al., 2004; Becker & Kerig, 2011; Stimmel et al., 2014). Based on the results of this study, it is important to consider that more often than not, youth entering treatment at Echo Glen have an increased likelihood

of trauma exposure and symptom expression. While externalizing behaviors (e.g., irritability or outbursts of anger and physiological reactivity) and internalizing behaviors (e.g., diminished interest in activities and restricted range of affect), may be expressed for a variety of reasons in juvenile justice youth, the potential for a trauma reaction can not be overlooked (Stimmel et al., 2014). The need for early and increased screening for trauma exposure and the identification of trauma symptomology in juvenile justice youth is paramount.

Given the results of the present study with regard to gender, Echo Glen also has the potential to be on the forefront of specialized trauma-focused treatment for girls. Additionally, a more thorough assessment of trauma exposure in boys is an important consideration as well. One factor to consider in light of these results involves the possibility of boys' tendencies to minimize the occurrence of trauma exposure and impact of symptoms when compared to girls, who may be more likely to acknowledge such events and symptomology (Addis & Mahalik, 2003; Galdas, Cheater, & Marshall, 2005; Topkaya, 2014; Yousaf, Popat, & Hunter, 2015).

Fox, Perez, Cass, Baglivio, and Epps (2015) also emphasized the fact that youth who became involved in the criminal justice system at an earlier age, had an increased likelihood of continued criminal behavior throughout adolescence. With previous research highlighting the trajectory of child-onset criminal behavior and the propensity for continued, more serious criminal offense behavior into adolescence, age is another demographic variable with particular implications for Echo Glen residents. With some of the youngest juvenile offenders in the state of Washington, further exploration in

characteristics specific to younger age groups will be an important topic of future investigation.

As Echo Glen residential units incorporate programming based upon particular committing offenses (e.g. drug and alcohol, sexual offense, maximum security, etc.), including trauma interventions and support services based on committing offense (e.g., assault/non-sexual assaultive violence and property offenders and forced sexual activity and interpersonal offenders) may be of additional benefit to youth. Finally, as Echo Glen is delineated as a mental health treatment facility, with particular living units identified as such, the results of the present study regarding specific trauma symptoms in youth with substance use disorders and disruptive behavior disorders, have increased implications for Echo Glen youth as well. In regards to the youth involved in the current study, over half of trauma-exposed youth endorsed trauma-specific symptoms, with girls reporting significantly higher levels of symptomology and older youth endorsing more trauma symptoms than younger. Additionally, youth with disruptive behavior disorders and substance use disorders may have had symptoms concurrent with their mental health diagnosis that actually masked their trauma symptoms. Yet, regardless of gender, age, committing offense, ethnicity or mental health diagnoses, youth entering treatment at Echo Glen have a high prevalence of exposure to trauma overall.

Limitations

The researcher identified several limitations of this study. First, due to the unique and specialized population of juvenile justice residents housed at Echo Glen (e.g., youngest juvenile offenders, girls, and mental health designated treatment), results were not generalizable to other JRA populations in Washington State or to juvenile justice

populations nationally. This was a sample of convenience, based upon archived data on new intake juvenile justice youth, in one residential treatment facility. Second, while the study sample primarily consisted of Caucasian boys between the ages of 14 and 15 who had committed a property offense, a number of diverse demographic categories were collapsed, to represent enough participants for analysis. In doing so, the variability represented throughout the study population (younger ages, ethnic makeup, and mental health diagnoses) was reduced. Additionally, socio-economic information was not available for youth in the present study. Previous research has documented higher rates of trauma exposure in lower-socioeconomic populations, with specific relationships identified among trauma, lower educational attainment, and low income levels (Brattström, Eriksson, Larsson, & Oldner, 2015; Klest, Freyd, Hamson, & Dubanoski, 2013).

Third, as this was an archival research study, parent/caretaker report was not possible and trauma exposure and symptom endorsement was reliant on youth self-report. Collateral consultation on the co-morbid mental health diagnoses obtained from the JRA records database was also unfeasible. The numbers of mental health diagnoses per youth ranged from none to eight and current versus former diagnoses were not differentiated. As a result, mental health disorders may have been under-diagnosed, as over half of the present study population did not have an identified mental health diagnoses. Previous research has documented the high rates of mental illness in juvenile justice youth overall, with 66%–75% of sample populations meeting criteria for at least one mental health disorder (Shufelt & Cocozza, 2006; Teplin et al., 2002). Additionally, in the current study, PTSD symptomology based upon DSM-IV-TR standards was used to assess

trauma symptoms in youth. Prior research has documented that the full potential impact of trauma exposure, including psychological and physical symptoms as well as behavioral disturbances, may not be fully represented or portrayed through such conditional criteria (Cloitre et al., 2009; Hinton & Lewis-Fernández, 2011; van der Kolk, Roth, Pelcovitz, Sunday, & Spinazzola, 2005).

Directions for Future Research

Future studies should continue to explore the increased use of effective, early screening measures to identify and signify trauma-exposed youth upon entry to Echo Glen. Such a focus may serve as a foundation for the implementation of trauma-focused interventions and standardized trauma specific treatment, both while youth reside at Echo Glen, as well as in preparation for their return to the home community upon release. Additional supports and resources will be extremely important as youth may transition back to the very environment (in the home, school, neighborhood, etc.), where the trauma originally occurred or may still be happening.

The inclusion of a more diverse juvenile justice population, with regards to age range, ethnicity, committing offense, a more equalized gender representation, and socio-economic status of youth would be beneficial as well. As previously noted, a number of demographic variable categories were collapsed, which reduced the true representation of age, ethnic minority status, and mental health diagnosis. The presence of youth who are girls, younger, and of ethnic minority status, have only increased in the juvenile justice system overall. These variables are also the very features that make Echo Glen residents unique, when compared to other juvenile justice youth. Furthermore, the utilization of

collateral resources to verify current and active mental health diagnoses would allow for further exploration of co-morbidity, trauma exposure, and symptomology.

This study was the first to specifically explore the relationship between trauma exposure, symptomology, and demographic variables in Echo Glen youth. Yet, the archived data used in this study is already two to four years old. Trauma exposure only seems to be even more prevalent and juvenile justice youth continue to endorse more exposure to traumatic events when compared to same-aged peers. The time for future research is now.

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Appendix A: Permissions

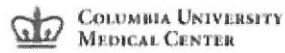
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Sincerely,
Britta Bergan, LMHC, PsyD Student
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February 26, 2016

Dear Britta Bergan,

I have received your letter requesting permission to use the printed format of the V-DISC PTSD module in your dissertation publication.

I am writing to approve your request and give you permission to include this module from the DISC in your publication.

Sincerely,

Signature removed for privacy

Prudence W. Fisher, PhD.
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Appendix B: V-DISC PTSD Module

Now I'm going to ask you about upsetting things that sometimes happen to children or teenagers.

1. Have you ever been in a flood ... or a tornado ... or an earthquake ... or hurricane ... or some other natural disaster where you thought you were going to die or be seriously injured?
2. Have you ever been in a situation where you thought you or someone close to you was going to be killed ... or be hurt very badly?
3. Have you ever been attacked by somebody ... or badly beaten?
4. Have you ever been very upset by someone forcing you to do something sexual that you really didn't want to do?

IF YES, A. Have you ever been attacked sexually or raped?

5. Have you ever been threatened with a weapon?

6. Have you ever been in a bad accident?

7. Other than television or at the movies, have you ever seen or heard somebody get killed ... or get hurt very badly ... or die?

8. Have you ever been very upset by seeing a dead body ... or by seeing pictures of the dead body of somebody you knew well?

a: IF ANY * RESPONSES WERE CODED IN Q 1 - 8, GO TO INSTRUCTION BOX "b"

ALL OTHERS GO TO MODULE B

b: IF ONLY ONE * RESPONSE WAS CODED IN Q 1 - 8, CONTINUE

ALL OTHERS GO TO Q 10

Module A:

Post-Traumatic Stress Disorder

DISC IV-Y, present state Page 77

9. You said that you [NAME * SITUATION IN Q 1 - 8]. Has something like this happened to you more than once?

IF YES, A. Have you thought about any of those things in the last four weeks?

IF YES, B. Which did you think about most? (GET FULL DESCRIPTION)

10. You said that you [NAME * SITUATION(S) IN Q 1 - 8]. Did these things all happen at the same time?

IF NO, A.

Have you thought about any of those things in the last four weeks?

IF YES, B. Which did you think about most? (GET FULL DESCRIPTION)

IF YES, C.

What happened to you?

CODE TRAUMATIC EVENT HERE ----->

Module A:

Post-Traumatic Stress Disorder

DISC IV-Y, present state Page 78

c: For the rest of the section: "TRAUMATIC EVENT" refers to the traumatic situation described in Q 9B, 10B, or 10C.

11. In the last four weeks, have you often thought about what [happened/you saw]?

12. When you [were/saw/heard][TRAUMATIC EVENT], did you feel very afraid?

13. When you [were/saw/heard][TRAUMATIC EVENT], did you feel helpless ... or feel bad that you couldn't do anything to stop it?

14. When you [were/saw/heard][TRAUMATIC EVENT], did you feel like you were going crazy ... like you didn't know what to do or say next?

15. Did [TRAUMATIC EVENT] happen in the last four weeks – that is, since [[NAME EVENT]/the beginning of/the middle of/the end of [LAST MONTH]]?

d: IF SUBJECT 12 YEARS. OR OLDER, CODE "8" IN Q 14, THEN GO TO Q 15

e: READ INTRODUCTORY STATEMENT BELOW ONLY IF EVENT OCCURRED MORE

THAN 4 WEEKS AGO

The next set of questions are about things you may have done in the last four weeks.

f: IF EVENT OCCURRED MORE THAN 4 WEEKS AGO, READ “IN THE LAST 4 WEEKS” IN Q 16 - 33

IF EVENT OCCURRED IN LAST 4 WEEKS, READ “SINCE [TRAUMATIC EVENT]” IN Q 16 - 33?

16. [In the last four weeks – that is, since [the beginning of/the middle of/the end of [LAST MONTH]/Since [TRAUMATIC EVENT]], have you often thought about [[TRAUMATIC EVENT]/what happened] even though you didn’t want to think about it?

IF YES, A. B.

Did you think about it a lot even when you were (at [school/work] or when you were) doing things with other people?

Does thinking about [TRAUMATIC EVENT] upset you a lot?

Module A:

Post-Traumatic Stress Disorder

DISC IV-Y, present state Page 79

g: IF SUBJECT 12 YEARS. OR OLDER, CODE “8” IN Q 17, THEN GO TO NOTE 1

17. [In the last four weeks/Since [TRAUMATIC EVENT]], have you often played games where something or someone gets hurt or scared in the same way that happened in [TRAUMATIC EVENT]?

18. [In the last four weeks/Since [TRAUMATIC EVENT]], have you had problems falling asleep or staying asleep?

IF YES, A. Do you have more trouble sleeping than you used to ... before [TRAUMATIC EVENT]?

19. [In the last four weeks/Since [TRAUMATIC EVENT]], have you had a lot of nightmares?

IF YES, A. Were these nightmares about [TRAUMATIC EVENT]?

20. [In the last four weeks/Since [TRAUMATIC EVENT]], have you ever found yourself reliving what happened ... thinking or feeling that [[TRAUMATIC EVENT]/it] was happening all over again?

21. [In the last four weeks/Since [TRAUMATIC EVENT]], have there been certain things that usually make you remember [[TRAUMATIC EVENT]/it]?

NOTE 1: WAS A * RESPONSE CODED IN Q 16 OR Q 17? 0 [2] [43]

IF YES, A.

C.

[In the last four weeks/Since [TRAUMATIC EVENT]], when these things remind you of [[TRAUMATIC EVENT]/it] do you get very nervous or upset?

[In the last four weeks/Since [TRAUMATIC EVENT]], when these things remind you of [[TRAUMATIC EVENT]/what happened], do you start to sweat or feel like you are going to faint?

22. [In the last four weeks/Since [TRAUMATIC EVENT]], have you tried very hard not to think about [[TRAUMATIC EVENT]/it] and not to hear about it or talk about it?

Module A:

Post-Traumatic Stress Disorder

DISC IV-Y, present state Page 80

23. [In the last four weeks/Since [TRAUMATIC EVENT]], have you stopped going places or doing things that might make you think about it?

24. [In the last four weeks/Since [TRAUMATIC EVENT]], have you tried to keep away from people who might remind you of [[TRAUMATIC EVENT]/what happened]?

25. [In the last four weeks/Since [TRAUMATIC EVENT]], have you found that no matter how hard you try to remember [[TRAUMATIC EVENT]/it] there are parts of what happened that you can’t remember?

26. [In the last four weeks/Since [TRAUMATIC EVENT]], have you felt less interested in things you used to enjoy?

IF YES, A. Is that a change from how you were before [TRAUMATIC EVENT]?

27. [In the last four weeks/Since [TRAUMATIC EVENT]], have you often felt separate or far away from other people as if you don’t fit in with them?

IF YES, A. Is this a change from how you were before [TRAUMATIC EVENT]?

28. [In the last four weeks/Since [TRAUMATIC EVENT]], has it been hard for you to feel strongly about other people - so that you can’t feel love for anyone or can’t hate or get angry at anyone?

IF YES, A. Is this a change from how you were before [TRAUMATIC EVENT]?

29. [In the last four weeks/Since [TRAUMA TIC EVENT]], have you stopped thinking about the future or about things you might do when you [grow up/are older]?

IFYES,A. Is this a change from how you were before [TRAUMATICEVENT]?

NOTE 2: WAS A * RESPONSE CODED IN Q 23 - 24? 0 [2] [63]

Module A:

Post-Traumatic Stress Disorder

DISC IV-Y, present state Page 81

30. [In the last four weeks/Since [TRAUMA TIC EVENT]], have you lost your temper a lot or been more irritable or grouchy?

IFYES,A. Is this a change from how you were before [TRAUMATICEVENT]?

31. [In the last four weeks/Since [TRAUMATIC EVENT]], has it been very hard for you to keep your mind on things or to concentrate?

IFYES,A. Is this a change from how you were before [TRAUMATICEVENT]?

32. [In the last four weeks/Since [TRAUMA TIC EVENT]], have you been very jumpy or nervous when you hear noises or when people are moving around you or touch you?

IFYES,A. Is this a change from how you were before [TRAUMATICEVENT]?

33. [In the last four weeks/Since[TRAUMA TIC EVENT]], have you jumped at sudden noises or when someone speaks to you?

IFYES,A. Is this a change from how you were before [TRAUMATICEVENT]?

START NEW CARD DUP COL 1 - 12

CARD NO. 0 2 [13 - 14] b [15]

h: IF 3 OR MORE [] RESPONSES WERE CODED IN Q 16 - 33, AND NOTES 1 - 2 (see tally sheet), CONTINUE

ALL OTHERS, GO TO MODULE B

Module A:

Post-Traumatic Stress Disorder

DISC IV-Y, present state Page 82

34. You said that you [NAME ALL * ITEMS AND [] SYMPTOMS IN Q 16 - 33, AND 0 NOTES 1 - 2]. Were you bothered by most of these things for as long as a month?

IF NO, A. Were you bothered by these things for two days or longer? **0 IF YES, B.** Were you bothered by most of these things for three months or 0 longer?

35. How soon after [TRAUMATIC EVENT] did you start feeling bothered by these things? Was it: (*Interviewer stop at first yes*) ... right away ... or did they start less than a month after [TRAUMATIC EVENT] ... or was it less than six months ... or did it start after that?

Right away 4 Within one month

..... 3 One month to less than six months

..... 2 Six months or longer 1

Refuse to answer 7 Don't know

..... 9

36. You said that in the last four weeks you [NAME ALL * ITEMS AND [] SYMPTOMS IN Q 16 - 33 AND NOTES 1 - 2].

In the last four weeks, have your [CARETAKERS] seemed annoyed or upset with 0 you because of the way you have felt or acted?

i: IF * RESPONSE TO Q 34 OR Q 34A, CONTINUE ALL OTHERS, GO TO MODULE B IF YES, A.

How often do your [CARETAKERS] seem annoyed or upset with you because you are like that? Would you say: a lot of the time, some of the time, or hardly ever?

A lot of the time 3 Some of the time

..... 2 Hardly ever

..... 1 Refuse to answer

..... 7 Don't know

..... 9

37. Does the way you feel or act keep you from doing things or going places with your 0 family?

1

2 7

IF YES, A.

How often does being like that keep you from doing things or going places with your family? Would you say: a lot of the time, some of the time, or hardly ever?

A lot of the time 3 Some of the time
 2 Hardly ever
 1 Refuse to answer
 7 Don't know
 9

Module A:

Post-Traumatic Stress Disorder

DISC IV-Y, present state Page 83

38. Does the way you feel or act keep you from doing things or going places with other 0 [children/people your age]?

IF YES, A.

How often does being like that keep you from doing things or going places with other [children/people your age]? Would you say: a lot of the time, some of the time, or hardly ever?

A lot of the time 3 Some of the time
 2 Hardly ever
 1 Refuse to answer
 7 Don't know
 9

39. Does the way you feel or act make you feel bad or make you feel upset? 0

IF YES, A.

How bad does being like this make you feel? Would you say: very bad, bad, or not too bad?

Very bad..... 3 Bad
 2 Not too bad
 1 Refused to answer
 7 Don't know
 9

j: IF CHILD DID NOT ATTEND SCHOOL OR WORK IN LAST YEAR, CODE "8" IN Q 40 AND Q 41, THEN GO TO Q 42

IF CHILD DID NOT ATTEND SCHOOL OR WORK IN LAST 4 WEEKS, READ THE FOLLOWING INTRODUCTION BEFORE Q 40, AND READ ITALICIZED ITEMS IN Q 40 AND Q 41:

For the next two questions, I want to ask about problems you may have had at [school/work] because of the way you have felt or acted.

Since you are not [in school/working] now, please think about when you were [in school/working], that is, in [NAME MONTH].

40. In the last four weeks (of [school/work]), [has/did] the way you felt or acted [[made/ 0 make] it difficult for you to do your schoolwork or [caused/cause] problems with your grades/[made/make] it difficult for you to do your work]?

IF YES, A.

How bad[are/were]the problems you've had with your [schoolwork/ work] because you [are/were] like that? Would you say: very bad, bad, or not too bad?

Very bad..... 3 Bad
 2 Not too bad
 1 Refuse to answer
 7 Don't know
 9

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41. [Does/Did] the way you felt or acted cause your [teachers/boss] to be annoyed or 0 upset with you?

IF YES, A.

How often [[are/is]/[were/was]] your [teachers/boss] annoyed or upset with you because you [are/were] like that? Would you say: a lot of the time, some of the time, or hardly ever?

A lot of the time 3 Some of the time

..... 2 Hardly ever

..... 1 Refuse to answer

..... 7 Don't know

..... 9

42. [In the last four weeks/Since [TRAUMATIC EVENT]], have you been to see 0 someone at a hospital or a clinic or at their office because of the way you felt or acted after [[TRAUMATIC EVENT]/it happened]?

IF NO, A. Do you have an appointment set up to see someone because of the 0 way you have felt or acted?

OPTIONAL DETAILS:

43.

A.

Who [did you/are you going to] see? (**WRITE IN:**)

Name: | ____ | Profession:

Address:

IF SOMEONE WAS SEEN, ASK:

What did the person you saw say was the matter?

| ____ |

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