

INDIVIDUALS WITH FETAL ALCOHOL SPECTRUM DISORDERS
IN THE CRIMINAL JUSTICE SYSTEM

Anna Biondi

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James Patton, Ed.D.
Department of Special Education
Supervising Professor

Wendy Domjan, Ph.D.
Department of Psychology
Second Reader

Abstract

Author: Anna Biondi

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Supervising Professors: James Patton, Ed.D. & Wendy Domjan, Ph.D.

This thesis evaluates the primary areas of vulnerability for individuals with fetal alcohol spectrum disorders who encounter the criminal justice system. Fetal alcohol spectrum disorders (FASD) are a leading cause of developmental disability in the United States, but these disorders often go undiagnosed due to their subtle or non-existent physical indicators and limited screening and diagnostic services. This thesis examines the neurocognitive and behavioral features of FASD and how these features lead to susceptibility for criminal justice involvement. The majority of individuals with FASD have been found to have contact with the criminal justice system (CJS) during their lifetime, and this thesis explores the unaddressed issues that this population faces once in the CJS due to the characteristics of their disorders.

This highly suggestible population is vulnerable to exploitation and misunderstanding throughout the criminal justice process, from unknowingly waiving their rights at arrest to giving false confessions during interrogation to being abused while incarcerated. This thesis identifies three key issues contributing to the mistreatment of individuals with FASD in the CJS: underdiagnosis of the disorders, limited knowledge about FASD among criminal justice professionals, and ineffective punitive sentencing measures. Potential solutions include the big picture need for large-scale screening for FASD among young children and the offender population, FASD specific trainings for people working in the criminal justice setting, and community-based rehabilitative sentencing options. The goal of this thesis is to draw attention to an under-recognized population and an area of criminal justice policy that requires reform.

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Introduction

Fetal alcohol spectrum disorders are a leading cause of developmental disability across the world (May, Chambers, Kalberg, Zellner, Feldman, Buckley, ... Hoyme, 2018; Mela, 2016). Though entirely preventable, these disorders are at least as prevalent as autism spectrum disorders in the United States (May et al., 2018). Fetal alcohol spectrum disorders (FASD) result from in utero exposure to the teratogen alcohol, which permanently damages the developing brain and can lead to a wide range of lifelong neurological, cognitive, and behavioral impairments that impact the day-to-day functioning of individuals with FASD (Chudley, Kilgour, Cranston, & Edwards, 2007). Since most people with FASD lack distinctive physical features to indicate the presence of a disorder, FASD is considered an “invisible” disability (Chasnoff, 2010). The outward invisibility of the disorders and limited screening services result in the majority of affected individuals going undiagnosed and without access to support services (Chudley et al., 2007; May et al., 2018).

Many of these undiagnosed individuals become involved with the criminal justice system (Burd, Fast, Conry, & Williams, 2010). Sixty percent of individuals with FASD encounter trouble with the law during their lifetime, a rate disproportionately higher than the general population (Streissguth, Bookstein, Barr, Sampson, O’Malley, & Young, 2004). Unfortunately, the legal system is poorly suited to recognize the needs of offenders with FASD (Fast & Conry, 2004; Mela, 2016; Wyper & Pei, 2016). The neurocognitive impairments associated prenatal alcohol exposure make individuals with FASD highly susceptible to involvement with the criminal justice system and create problems for this vulnerable group of offenders throughout the legal process (Brown, Wartnik, Connor, & Adler, 2010).

This thesis aims to identify the primary areas of vulnerability for individuals with FASD in the criminal justice context by exploring the unaddressed issues and inequities encountered by offenders with FASD. The first chapter of this thesis provides background on fetal alcohol spectrum disorders, beginning with the disorders' biological foundation and the teratogenic effects of alcohol on the developing brain. This chapter describes the continuum of diagnoses that fall under the category of fetal alcohol spectrum disorders and then synthesizes studies pertaining to the prevalence of FASD and barriers to diagnosis. Finally, the first chapter details the neurocognitive and behavioral challenges associated with FASD, which are the basis for the vulnerabilities this population experiences in the CJS.

The second chapter assesses the realities of criminal justice involvement for offenders with FASD. It discusses the over-representation of individuals with FASD in the CJS and factors, such as executive functioning deficits and susceptibility to manipulation, that contribute to their trouble with the law (Brown et al., 2010). This chapter looks at how neurocognitive and behavioral impairments adversely impact offenders with FASD throughout the legal process during arrest, interrogation, interaction with counsel, trial, testimony, probation and parole, and incarceration, and how the criminal justice system fails to recognize the needs of individuals affected by prenatal alcohol exposure.

The final chapter offers a discussion of the key issues contributing to the vulnerability of individuals with FASD in the CJS. This chapter then proposes and evaluates potential solutions to these issues, as identified in the literature. The proposed solutions focus on the need for large-scale FASD screening among young children and the offender population, the implementation of FASD specific recommendations for professionals who work in the criminal justice setting, and the benefits of alternative sentencing in the community for offenders with FASD. Due to the

infrequent recognition of these highly prevalent disorders, this thesis aims to heighten awareness of the challenges that people with FASD experience throughout their lives with special attention on issues associated with the criminal justice system.

Thesis Questions

This thesis aims to answer the following overriding questions: (1) What are the main neurocognitive and behavioral challenges associated with FASD? (2) What factors contribute to the high incidence of individuals with FASD within the criminal justice system? (3) What are the primary areas of vulnerability for individuals with FASD in the CJS? (4) What are possible solutions to the issues encountered by individuals with FASD throughout the legal process?

Methodology

In order to answer these thesis questions, a synthesis and review of the existing literature on fetal alcohol spectrum disorders was conducted, with a particular focus on literature related to interactions with the criminal justice system. A systematic literature search was performed in order to identify published studies related to the cognitive and behavioral features of fetal alcohol spectrum disorders, screening methods for FASD, the prevalence of FASD, the incidence of FASD in offender populations, common offenses committed by people with FASD, the experiences of people with FASD during the criminal justice process (i.e., interrogation, testimony, trial, sentencing, probation, incarceration, and re-entry), and alternative sentencing recommendations.

The protected status of this population as both individuals with developmental disabilities and offenders in correctional facilities prevented the conduction of interviews or direct research,

so a literary synthesis that brings together existing research on different aspects of FASD was conducted instead. However, a relatively limited amount of empirical evidence is available on the issues facing individuals with FASD in the criminal justice setting (McLachlan, Roesch, Viljoen, & Douglas, 2014; Popova et al., 2011), as few studies “undertake evaluation of this difficult-to-access and vulnerable population” (McLachlan et al., 2014, p. 20).

This synthesis and review primarily consists of articles appearing in scholarly, peer-reviewed journals but also includes reports from governmental agencies, edited volumes, and books. The search for relevant literature was conducted using multiple bibliographic databases, including Wiley Online Library, SAGE journals, Science Direct, Academic Search Complete, Springer Link, The JAMA Network, APA PsychNet, CDC Stacks, JSTOR, and Ovid. When searching the databases, multiple combinations of the following key words were used: fetal alcohol spectrum disorder, fetal alcohol syndrome, criminal justice system, corrections, prevalence, incidence, screening, diagnosis, secondary disabilities, crime, prison, incarceration, sentencing, interrogation, mitigation, court, adaptive behavior, social skills, executive functioning, intervention. The peer-reviewed journals utilized include: *The Journal of Psychiatry & Law*, *The Journal of Law Enforcement*, *Criminal Justice and Behavior*, *Addiction Biology*, *Alcoholism: Clinical and Experimental Research*, *Journal of Developmental and Behavioral Pediatrics*, *American Journal of Medical Genetics*, *Developmental Disabilities Research Reviews*, *JAMA (Journal of the American Medical Association)*, *Law and Human Behavior*, *The Neuroscientist*, *Juvenile and Family Court Journal*, *Canadian Journal of Public Health*, *Canadian Journal of Criminology and Criminal Justice*.

Dr. Stephen Greenspan, a leading researcher in the field of FASD and criminal justice involvement, was also contacted. Dr. Greenspan provided materials, including two special FASD

issues of *The Journal of Psychiatry & Law* and articles that he authored: “Why People with FASD Fall for Manipulative Ploys: Ethical Limits of Interrogators’ Use of Lies,” “FASD and the Concept of Intellectual Disability Equivalence,” “Ethnic and Cultural Factors in Identifying Fetal Alcohol Spectrum Disorders,” and “Adaptive Behavior and Fetal Alcohol Spectrum Disorders.”

The early stages of this project’s research focused on widely cited studies, such as the longitudinal studies conducted through the University of Washington clinics where fetal alcohol syndrome was first discovered. After reviewing the seminal research on fetal alcohol spectrum disorders, the next stage of the research process focused on articles about FASD from the past twenty years. The reference lists of relevant articles were utilized to find further sources. In addition to the articles from Dr. Greenspan, this synthesis includes a number of works by leading researchers in the field such as Ann Streissguth, Natalie Novick Brown, Larry Burd, Diane Fast, Julianne Conry, and Philip May. The most recent study incorporated into this thesis is May and associates’ “Prevalence of Fetal Alcohol Spectrum Disorders in Four US Communities,” published in *JAMA* on February 6, 2018 and one of few studies evaluating the population with FASD conducted in the past five years.

Chapter One: Background on Fetal Alcohol Spectrum Disorders

This chapter provides background information important to understanding the neurological effects of prenatal alcohol exposure (PAE) and to appreciating the hidden presence of fetal alcohol spectrum disorders in the general population. After an overview of the teratogenic effects of alcohol on the developing brain, this chapter describes the full continuum fetal alcohol spectrum disorders that can result from PAE and the prevalence rates of these disorders. Despite the high estimated prevalence of fetal alcohol spectrum disorders in the United States, many affected individuals never receive a diagnosis, which adversely affects their access to appropriate support services and their life outcomes (Chasnoff, 2010; May, Gossage, Kalberg, Robinson, Buckley, Manning, & Hoyme, 2009; May et al., 2018). This chapter discusses the challenges that impede accurate diagnosis for children and adults with FASD and the implications of having outwardly invisible brain damage but significant cognitive and behavioral differences. The cognitive and behavioral expressions of FASD are detailed, with particular emphasis on how the disorders affect executive functioning, IQ, adaptive functioning, memory, language, attention, social skills, and the development of secondary disabilities. These neurological impairments are the foundation for the vulnerabilities that individuals with FASD experience in the criminal justice system.

Alcohol as a Teratogen

Fetal alcohol spectrum disorders result from maternal alcohol consumption during pregnancy. When a developing embryo or fetus is exposed to the teratogen alcohol, permanent brain damage can occur (Brown, Hesse, Wartnik, Long-McGie, Andrews, Mahoney Weaver, ...

Rohret, 2015; Chudley et al., 2007; Olson, Ohlemiller, O'Connor, Brown, Morris, Damus, 2009). This prenatal brain damage manifests as a range of lifelong physical, neurological, cognitive, and behavioral impairments that fall under the umbrella term of fetal alcohol spectrum disorders (May et al., 2009; Medina, 2011; Popova, Lange, Bekmuradov, Mihic, & Rehm, 2011; Wyper & Pei, 2016).

As a neurobehavioral teratogen, alcohol affects aspects of prenatal development, influencing cellular, hormonal, neurochemical, and structural development (Olson et al., 2009). Prenatal alcohol exposure (PAE) alters the formation of neurons and neuronal connections in the developing brain (Olson et al., 2009) and affects neuron plasticity, a critical property for the processes of learning and memory (Medina, 2011). In addition, alcohol exposure adversely affects the placenta throughout pregnancy by constricting blood flow, reducing the oxygen and nutrients received by the fetus (Fast & Conry, 2009). Prenatal alcohol exposure can harm the developing brain throughout pregnancy; however, the amount of alcohol consumed, the frequency of consumption, and the timing of consumption during fetal development affect the type and extent of damage that occurs (Chudley et al., 2007; Fast & Conry, 2004; May et al., 2009). Exposure to other environmental teratogens such as smoking, poor diet, and other drug use also increases the adverse outcomes that result from PAE (Burd et al., 2010; Fast & Conry 2004). Though most research suggests that high blood alcohol level in the mother from binge drinking is the key contributor to fetal alcohol damage (Mackenzie, Godwin, & Thompson, 2016; May et al., 2018; Page, 2001), the U.S. Surgeon General states that there is no safe amount of alcohol consumption during pregnancy (U.S. Surgeon General, Carmona, R.H., 2005).

The effects of PAE differ depending on the specific stage of gestation when exposure occurs (Medina, 2011). For example, the distinctive facial features that characterize fetal alcohol

syndrome result from alcohol exposure during the first trimester, specifically during the third week of pregnancy (Medina, 2011; Page, 2001). First trimester exposure also damages the developing limbic system, which guides information processing and influences behavior, emotion, and thought (Chasnoff, 2010). The limbic system includes the hippocampus, which, when damaged by PAE, has difficulty transferring neurologically generated maps of information to long-term memory (Chasnoff, 2010; Chudley et al., 2007). The vulnerability of the developing hippocampus to the harmful effects of alcohol contributes to the learning and memory challenges experienced by individuals with FASD (Fast & Conry, 2009; Kodituwakku, 2009). During the second trimester, alcohol exposure affects the migration of neurons, resulting in conditions such as gray matter heterotopia, abnormalities in the size, shape, and position of the corpus callosum, and hypoplasia of the basal ganglia and hippocampus (Chudley et al., 2007; Medina, 2011). PAE in the third trimester interferes with the development of gyri and sulci in the cerebral cortex; this reduction of cortical folds significantly reduces the brain's surface area (Chasnoff, 26). A period of fast growth occurs in the third trimester, during which neurons are particularly susceptible to alcohol-triggered apoptosis (Medina, 2011). This excess of cell death dramatically reduces the total number of neurons for exposed individuals (Medina, 2011; Mela, 2016).

Regardless of the specific trimester, prenatal alcohol exposure causes neurological damage that affects the whole brain (Fast & Conry, 2009). Brain regions particularly affected by PAE include: the corpus callosum, cerebellum, basal ganglia, hippocampus, and amygdala (Chudley et al., 2007; Fast & Conry, 2009; Woods, Greenspan, & Agharkar, 2011). The damage to the corpus callosum contributes to the challenges with executive functioning experienced by people with FASD (Fast & Conry, 2009). Because brain regions develop interdependently, undamaged regions of a brain affected by PAE may also undergo atypical development

(Kodituwakke, 2009). The functional difficulties associated with FASD are rooted in organic brain damage caused by prenatal alcohol exposure.

Spectrum of Disorders: FAS, PFAS, and ARND

The medical community only began recognizing the detrimental effects of prenatal alcohol exposure on the developing central nervous system less than fifty years ago (Chudley et al., 2007; Jones & Streissguth, 2010). The diagnosis of fetal alcohol syndrome (FAS) was first introduced in 1973 (Jones & Streissguth, 2010). A decade after the original description of FAS, which includes distinctive physical characteristics in addition to neurocognitive differences, it became clear that PAE still caused significant neurocognitive and behavioral impairment in individuals who lacked the facial features and growth deficiencies seen in FAS (Chudley et al., 2007; Jones & Streissguth, 2010; Page, 2001). Variations in maternal drinking patterns coupled with exposure to additional risk or protective maternal factors produce a broad spectrum of disabilities, now known collectively as fetal alcohol spectrum disorders (FASD) (Jones & Streissguth, 2010; May et al., 2009).

FASD is not a diagnosis—it is a term that refers to the entire continuum of disorders caused by prenatal alcohol exposure (Burd et al., 2010; Chudley et al., 2007; Fast & Conry, 2004). FASD is an umbrella term that includes the diagnostic categories of fetal alcohol syndrome (FAS), partial FAS (PFAS), and alcohol-related neurodevelopmental disorders (ARND) (Burd et al., 2010; Chudley et al., 2007; May et al., 2018; May et al., 2009). Formerly, the term Fetal Alcohol Effects (FAE) was used to describe the current diagnoses of partial FAS and ARND, diagnoses that involve substantial behavioral and cognitive challenges but few physical features of prenatal alcohol exposure (Brown et al., 2010; Chudley et al., 2007; Fast &

Conry, 2009). All of the diagnoses on the spectrum of fetal alcohol disorders involve substantial damage to the central nervous system, and children prenatally exposed to alcohol exhibit neurocognitive and behavioral challenges regardless of whether or not they have the facial characteristics associated with PAE (Burd et al., 2010; Kodituwakku, 2009; Page, 2001).

Fetal alcohol syndrome is considered on the severe end of the FASD continuum (Jones & Streissguth, 2010; Kodituwakku, 2009). To receive a diagnosis of FAS, an individual must exhibit central nervous system impairment, characteristic facial features, and prenatal and/or postnatal growth deficiencies (Burd et al., 2010; May et al., 2009; Chudley et al., 2007; Jones & Streissguth, 2010; Kodituwakku, 2009). The three cardinal facial features of FAS include short palpebral fissures, a smooth philtrum, and a thin upper lip (Burd et al., 2010; Chudley et al., 2007; Jones & Streissguth, 2010; May et al., 2009); children with FAS may also have microcephaly (May et al., 2009). FAS is the only diagnosis on the fetal alcohol spectrum that can be made with or without information confirming prenatal alcohol exposure (Burd et al., 2010; Chudley et al., 2007).

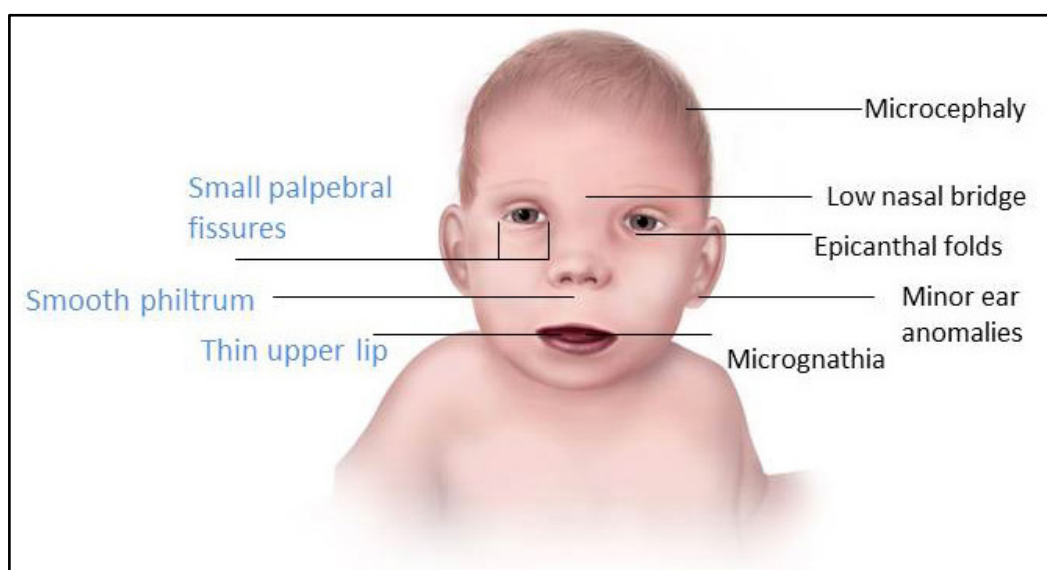


Image 1: Facial Features of Fetal Alcohol Syndrome (FAS)

Source: American Academy of Pediatrics (2018).

Similar to FAS, individuals diagnosed with partial FAS also have some of the facial features characteristic of PAE. A diagnosis of PFAS requires neurodevelopmental and behavioral impairments, two of the three facial characteristics (short palpebral fissures, smooth philtrum, and thin vermilion borders to the upper lip), and a confirmed history of maternal alcohol consumption (Burd et al., 2010; May et al., 2009). Children with PFAS may also have prenatal or postnatal growth deficiencies in height or weight (May et al., 2009). Children with both FAS and PFAS tend to be shorter, weigh less, and have a smaller head circumference than their peers and may be susceptible to health issues such as heart murmurs (May et al., 2009). However, for every individual with the facial characteristics of PAE, there are three to four individuals with alcohol-related brain damage who do not have physical characteristics of PAE (Olson et al., 2009; Page, 2001). The majority of children with FASD do not have clinically discernable physical features of PAE despite the presence of significant neurodevelopmental challenges (Kodituwakku, 2009).

The diagnosis of alcohol-related neurodevelopmental disorder (ARND) is given to individuals with a confirmed history of prenatal alcohol exposure who have neurocognitive challenges in executive functioning, communication, attention, memory, academic skills, and adaptive behavior (Burd et al., 2010; Kodituwakku, 2009; May et al., 2009; Streissguth et al., 2004). Individuals with ARND do not have the facial characteristics of PAE or growth deficiency (Burd et al., 2010; Fast & Conry, 2004; Kodituwakku, 2009; McLachlan et al., 2014), so diagnosis of ARND relies on a comprehensive neuropsychological assessment (Burd et al., 2010). The absence of physical markers makes the diagnosis of ARND a more complicated process (Burd et al., 2010), and many children and youth with ARND go undiagnosed due to the outward invisibility of their disability (Chasnoff, 2010; May et al., 2009). Though FAS is

considered the severe end of the fetal alcohol spectrum, individuals with PFAS or ARND may experience more severe neurological impairment than someone with full FAS, and a diagnosis of ARND is a risk factor for a number of adverse life outcomes, including increased susceptibility to criminal behavior and victimization, as compared to FAS (Fast & Conry, 2009; Streissguth et al., 2004).

Prevalence

Even though fetal alcohol spectrum disorders are preventable unlike many genetic syndromes, FASD is the leading cause of developmental disability in the Western world (Chudley et al., 2007; Jones & Streissguth, 2010; May et al., 2018; Mela, 2016; Wyper & Pei, 2016). Fetal alcohol spectrum disorders are at least as common as autism spectrum disorders in the United States today, and autism spectrum disorders occur at a rate of 1 in 68 children (May et al., 2018). Up until May et al.'s 2018 study, FASD was thought to have a prevalence rate of approximately 1 in 100 live births (Burd et al., 2010; Jones & Streissguth, 2010; May et al., 2009; Woods et al., 2011; Wyper & Pei, 2016), a higher prevalence rate than that of Down syndrome and spina bifida combined (Chudley et al., 2007). However, May et al.'s cross-sectional study of 13,146 first graders in four regions of the United States found a much higher prevalence rate; the study's conservatively estimated prevalence of FASD ranged from 11.3 to 50.0 per 1,000 children, and its weighted approach estimated a prevalence of 31.1 to 98.5 cases of FASD per 1,000 children (May et al., 2018). Former prevalence estimates among populations of young school children in the US thought FASD to affect 2-5% of children (Brown et al., 2015; Burd et al., 2010; May et al., 2009; Wyper & Pei, 2016), though the methodology used in these studies likely missed cases of ARND, the most common of the fetal alcohol spectrum disorders

(Burd et al., 2010; May et al., 2009). Prevalence of the full spectrum of FASD, particularly ARND, is challenging to estimate due to the lack of clear biological markers among those affected; current estimates are likely an under-representation of the actual prevalence of FASD (Chudley et al., 2007; Jones & Streissguth, 2010; May et al., 2009; Page, 2001; Woods et al., 2011). Of the four million annual pregnancies in the US, about 500,000 pregnant women drink at least weekly and 80,000 have consistently high blood alcohol levels throughout pregnancy, placing the number of prenatally exposed infants, children, and adolescents in the millions (Brown et al., 2015; Burd et al., 2010).

A strong association exists between poverty and alcohol consumption before and during pregnancy, so individuals from lower socioeconomic backgrounds are at a higher risk for FASD (Chudley et al., 2007; Woods et al., 2011). This link between low SES and FASD places certain ethnic groups at a greater risk for the disorders (May et al., 2009; Woods et al., 2011). In the US, the highest rates of FASD occur among Native Americans and Alaskan Native communities (Burd et al., 2010; Greenspan, Brown, & Edwards, 2016; May et al., 2009; Mela, 2016; Woods et al., 2011) followed by African Americans (Woods et al., 2011). Birth mothers of children with FASD are more likely to live in low SES areas and have lower educational attainment, higher gravidity and parity (i.e., a greater number of times the mother has been pregnant and a greater number of pregnancies carried to >20 gestational weeks), poorer nutrition, and lower body mass than comparison mothers (May et al., 2009). The communities most affected by FASD are largely those already over-represented in the CJS (Woods et al., 2011).

Diagnosis

Since ARND does not have any outward indication of impairment and the physical characteristics of PFAS and FAS are often subtle, FASD is considered a hidden or invisible disability (Chasnoff, 2010; Chudley et al., 2007; McLachlan et al., 2014). The “typical” appearance of many individuals with FASD leads schools, families, and the criminal justice system to expect typical behavior and reasoning skills without considering the hidden brain damage caused by PAE (Chasnoff, 2010; McLachlan et al., 2014; Page, 2011). Many children with FASD never receive a proper diagnosis (Chasnoff, 2010; May et al., 2009; Passmore, Giglia, Watkins, Mutch, Marriott, Pestell, ... Bower, 2016). An estimated 80% of children with FASD are not diagnosed and 7% are misdiagnosed (May et al., 2018). The limited number of diagnostic and treatment services in place for individuals with FASD and the general lack of knowledge about the disorders means that children with undiagnosed FASD, especially ARND, are rarely seen at the clinics capable of making the diagnoses (Chudley et al., 2007; May et al., 2009).

The absence of a FASD diagnosis or being diagnosed at an older age greatly increases the chance of adverse life outcomes and future problems for individuals with FASD (Burd et al., 2010; May et al., 2009; Page, 2001; Streissguth et al., 2004). Without an early and accurate diagnosis, children with FASD will not receive proper intervention services, and they may not be placed in the appropriate academic setting, putting them at risk of falling behind, being considered behavior problems, and eventually dropping out (May et al., 2009). A diagnosis of FASD increases school and family understanding of the child’s behaviors and neurocognitive needs; receiving a diagnosis can shift the perspective of children with FASD from willful ‘behavior problems’ to children with organic brain damage who require greater behavioral

supports (May et al., 2009). As Page writes, “Without a low IQ score, obvious mental illness, or physical signs of birth defect, societal protection is lacking, and blame or punishment is all too often the only response” (2001, p. 26).

Challenges in Diagnosing Children

The low availability of diagnostic services, in terms of both skilled professionals and screening programs, prevents children with FASD from getting an early diagnosis (Chudley et al., 2007; May et al., 2009; Mela, 2016). Few pediatricians and primary care providers have adequate clinical expertise to diagnose fetal alcohol spectrum disorders (Chudley et al., 2007; Jones & Streissguth, 2010; Passmore et al., 2016), and there are a very limited number of trained professionals and expert diagnostic teams available for referral (Chudley et al., 2007; Jones & Streissguth, 2010). There is also a lack of routine screening for FASD in prenatal clinics and schools (May et al., 2009). May and associates report that of 40 newborns in a large Texas hospital, all of whom were born to heavy drinking mothers and had most of the physical characteristics of FAS, 100% left the hospital without a FAS diagnosis, and most of the children never received a diagnosis despite follow-up exams estimating almost half of them had possible FAS (2009, 182).

Diagnoses of PFAS and ARND are complicated by the necessity of obtaining the birth mother’s drinking history. The stigmatization of maternal alcohol use leads mothers to underreport their consumption (Jones & Streissguth, 2010; May et al., 2009; Passmore et al., 2016) and makes clinicians reluctant to ask about alcohol use during pregnancy (Jones & Streissguth, 2010). Additionally, over 80% of children born with FASD do not live with their

biological mothers (Wyper & Pei, 2004), which makes it difficult to obtain a confirmation of prenatal alcohol exposure (Burd et al., 2010; Streissguth et al., 2004).

Challenges in Diagnosing Adults

Diagnostic challenges become more profound when assessing adults. Due to misconceptions about the nature of FASD and a general lack of knowledge about the disorders, primary care physicians may not be aware of the possibility of FASD in adults to even make a diagnostic referral (Chudley et al., 2007). The characteristic facial features of FAS and PFAS change over time as the individual ages (Burd et al., 2010; Fast & Conry, 2004). These physical features are most recognizable in childhood, which makes diagnosis more difficult in adolescence and adulthood (Fast & Conry, 2009). Following a group of individuals diagnosed with FAS over time, only 10% continued to have recognizable features of FAS or PFAS into adulthood (Burd et al., 2010; Fast & Conry, 2004; Fast & Conry, 2009). Obtaining birth mother history remains a significant challenge (Chudley et al., 2007). The birth mother may not be available for interview and birth records may be unavailable or non-existent (Chudley et al., 2007; Fast & Conry, 2009). While confirmation of prenatal alcohol exposure can come from a reliable source other than the birth mother, this source may also be difficult to obtain if the individual with suspected FASD no longer has contact with their biological family (Burd et al., 2010). Exposure to post-natal adversity also complicates the diagnosis of FASD in adults who may have suffered additional head trauma and violence (Burd et al., 2010; Fast & Conry, 2004). In the words of May et al., fetal alcohol spectrum disorders are a “hidden epidemic” since the clinical capacity and expertise needed to recognize and diagnose the disorders is not present, leaving many children and adults undiagnosed (2009, p. 177).

Cognitive and Behavioral Features

The neurological damage caused by prenatal alcohol exposure can lead to a range of lifelong cognitive and behavioral impairments that significantly impact the day-to-day functioning of individuals with fetal alcohol spectrum disorders (Fast & Conry, 2004; Wyper & Pei, 2016). Alcohol-related damage to the prefrontal cortex and hippocampus particularly affects the complex cognitive skills necessary for successful daily living, such as executive functioning, working memory, and information processing (Chudley et al., 2007; May et al., 2009). Damage to the limbic system along the midline of the brain results in sensory processing dysfunction for individuals with FASD, who may have higher or lower sensory thresholds than typically developing individuals (Chasnoff, 2010). People with high sensory thresholds require greater levels of sensory input, such as instructions given in a raised voice or very tight hugs, in order to process the sensory information, while people with low sensory thresholds may find a normal speaking voice painfully loud and the feeling of the tag in the back of their shirt unbearable (Chasnoff, 2010).

The most common neurocognitive and neurobehavioral impairments experienced by individuals with FASD include deficits in executive functioning, intelligence, adaptive behavior, language, attention, memory, and social skills, and these impairments are often accompanied by comorbid disorders and secondary disabilities, such as mental health and substance use disorders (Brown et al., 2015; Streissguth, Barr, Kogan, & Bookstein, 1996; Wyper & Pei, 2016).

Individuals with FASD vary widely in their expression of these deficits due to variations in timing and concentration of PAE (May et al., 2009). Neuropsychological testing of individuals with FASD often reveals a mixed pattern of weaknesses and relative strengths (Brown, Connor, & Adler, 2012). While some individuals exhibit significant global delays, others display average

cognitive skills with pockets of deficits in specific areas; however, regardless of cognitive ability, the majority of individuals with FASD struggle to meet the basic expectations of daily living (Chasnoff, 2010).

Executive Functioning

Due to the damaging effects of prenatal alcohol exposure on the developing frontal lobe, deficits in executive functioning are among the most frequently documented impairments in the population with FASD (Brown et al., 2010; Wyper & Pei, 2016). Executive functioning refers to the set of higher-order cognitive skills and processes necessary for adaptive self-regulation, particularly in novel situations (Brown et al. 2010; Wyper & Pei, 2016). The skillset encompassed by executive functioning includes planning, decision-making, response inhibition, cognitive flexibility, working memory, and emotional regulation (Brown et al., 2010; Fast & Conry, 2009; Kodituwakku, 2009; Wyper & Pei, 2016). Executive functioning involves translating what one knows, or intelligence, into action, or adaptive behavior (Greenspan et al., 2016). Like individuals with frontal lobe injuries, people with FASD struggle with judgment, lability, and impulse control (Greenspan, 2008). Individuals with FASD tend to have difficulty planning ahead, learning from the consequences of past behavior, self-monitoring, and inhibiting initial responses in favor of better long-term outcomes (Burd et al., 2010). These complex executive functioning skills become particularly compromised when people with FASD are faced with unfamiliar situations requiring higher levels of information manipulation and emotional regulation (Kodituwakku, 2009; Wyper & Pei, 2016).

People with FASD often go about planning with a narrow and single-minded focus, thinking only of their immediate goal without considering past consequences or the potential

future consequences for themselves and others (Brown et al., 2010). Many individuals with FASD lack the executive functioning skills for cause-and-effect thinking (Fast & Conry, 2004). People with FASD are unable to connect their actions to subsequent consequences, and they cannot generalize from past experiences to new situations (Fast & Conry, 2004). Thus, the negative consequences of past decisions have little influence on current decisions since individuals with FASD often do not learn from their mistakes to make more positive future choices (Wyper & Pei, 2016).

This inability to evaluate cause-and-effect is related to deficits in working memory (Kodituwakku, 2009). People with FASD have difficulty storing and manipulating disparate pieces of information in their working memory, so they struggle to take all of the relevant information into account when reflecting and making decisions about future actions (Brown et al., 2010; Kodituwakku, 2009). Impairments in cognitive flexibility also compromise the decision-making process of individuals with FASD (Burden, Jacobson, & Jacobson, 2005). While decision-making, people with FASD have difficulty weighing different alternatives and considering possible outcomes (Brown et al., 2010). Since individuals with FASD cannot assess the likely outcome of where their behavior is leading them, their behavior is often characterized by perseveration—the inability to change the course of their behavior midway, despite clear negative consequences (Brown et al., 2010).

Of the many executive functioning deficits associated with FASD, significant problems with impulse control are the most prevalent (Brown et al., 2010). Individuals with FASD have a reduced response inhibition, or an impaired ability to control behavioral impulses that are likely to have negative consequences (Brown et al., 2010; Kodituwakku, 2009). Impulsive behavior accompanied by an inability to foresee consequences has clear implications for CJS involvement,

and the collective impairments in executive functioning contribute to the difficulties experienced by individuals with FASD in social functioning and in the criminal justice system (Burd et al., 2010; Fast & Conry, 2009).

Intelligence

Individuals with FASD exhibit a broad spectrum of intelligence with cognitive abilities ranging from intellectual disability to average intelligence or higher (Burd et al., 2010). IQ score may correspond to the frequency of alcohol exposure in utero; Chasnoff reports that four-year-old children who had been subjected to three or more drinks per day in utero were three times more likely to have an IQ score below 85 than other alcohol exposed children (2010). School age children with FASD tend to show diminished intellectual functioning with their typical IQ scores falling in the borderline to low average ranges (Chasnoff, 2010; Kodituwakku, 2009). With Full Scale IQ scores in the low average range, individuals with FASD often have a Performance IQ within the normal limits but a significantly lower Verbal IQ, and while their word reading abilities may be within the normal range, their math skills tend to be significantly impaired compared to age-matched controls (Chudley et al., 2007).

Only a minority of individuals with FASD have an IQ below 70, the IQ marker for intellectual disability and the traditional qualifier for special services in schools and the community (Streissguth et al., 2004). Despite having significant impairments in adaptive functioning, the low average IQs of many adults with FASD preclude them from services provided to individuals with more pronounced intellectual disabilities, such as Supplemental Security Income and Social Security Disability Insurance (Wyper & Pei, 2016). Individuals with FASD are often falsely perceived as 'normal' based on their IQ scores alone (Chudley et al.,

2007, p. 268; Wyper & Pei, 2016). However, for individuals with FASD, IQ score does not correspond to adaptive functioning abilities (Fast & Conry, 2009). In fact, individuals with FASD who have a higher IQ potentially experience more difficulties in day-to-day functioning than those with a low range IQ since these individuals are less likely to be identified for support services and early childhood or school-aged intervention (Burd et al., 2010; Streissguth et al., 1996), and individuals with a low average IQ of above 85 are more likely to experience trouble with the law than those with an intellectual disability IQ of below 70 (Fast & Conry, 2009).

Adaptive Behavior/Functioning

Due to their substantial impairments in executive functioning, individuals with FASD have deficits in adaptive behavior that fall far below what would be expected based solely on their average to low average IQ scores (Fast & Conry, 2009). For most people, intellectual functioning and adaptive functioning are directly linked, but individuals with prenatal alcohol exposure are one of the few disability groups that exhibit a significant discrepancy between their cognitive abilities and adaptive behavior (Chasnoff, 2010). Streissguth and associates evaluated 415 individuals with FASD using the Vineland Adaptive Behavior Scales, which assess proficiency in communication, daily living skills, and socialization to reach a composite adaptive behavior score (2004). Streissguth and associates found that the mean adaptive behavior composite for this group of individuals with FASD fell 1 to 1.5 normative standard deviations below their mean Wechsler IQ scores and far below the normative population average (2004).

Adaptive behavior is professionally defined as the effectiveness with which a person meets the standards of personal independence and social responsibility expected of an individual of the same age and cultural group. Measured through a variety of standardized scales, adaptive

behavior assesses an individual's competence in the real world rather than in an artificial assessment situation such as an IQ test (Edwards & Greenspan, 2010). Routine IQ testing fails to detect the debilitating deficits in adaptive functioning experienced by individuals with FASD (Streissguth et al., 2004; Wyper & Pei, 2016). Even individuals with FASD who have full-scale IQs in the 80's or 90's function in the real world as if they have an intellectual disability (Edwards & Greenspan, 2010). Regardless of their IQ, people with FASD are unable to meet societal standards of personal independence and social responsibility (Fast & Conry, 2004). Adults with FASD struggle with the basic requirements of daily living, such as looking after personal care and hygiene, completing household chores, obtaining and maintaining employment, budgeting money, managing time, and enjoying social relationships (Burd et al., 2010; Chasnoff, 2010; Fast & Conry, 2004). Deficits in adaptive functioning tend to become more pronounced as children with FASD transition into adolescence, and alcohol-exposed teenagers fall even further behind their peers in communication skills, daily living skills, and social skills than they did as younger children (Chasnoff, 2010). In the criminal justice context, when individuals with FASD are 12-years-old, the age at which children often encounter the juvenile justice system, they may be functioning adaptively at the level of 6-to-8-year-olds, and when individuals with FASD are 18-years-old chronologically, the age at which they enter the adult CJS, their adaptive skills may be equivalent to those of a child age 10 or younger (Burd et al., 2010).

Memory

According to Chasnoff, the inconsistent memory of alcohol-exposed children is one of the most common problems reported by their caregivers (2010). Parents and teachers become easily frustrated by the unreliable storage and recall of individuals with FASD who are able to remember certain things, such as multiplication tables or the alphabet, on some days but not on others (Chasnoff, 2010). For adults with FASD, these profound memory deficits limit the ability to appropriately comply with the expectations of various programs and can have significant consequences; employers or probation officers may have difficulty understanding why an individual is capable of successfully completing an assigned task on one day but then forgets the task or how to do it the next day (Brown et al., 2015). These memory deficits are often misconstrued as laziness or a lack of motivation rather than as part of a brain-based disorder beyond the individual's control (Brown et al., 2015; Chasnoff, 2010).

Individuals with FASD have deficits in the processing and integration of information, which gives rise to these difficulties with memory (Kodituwakku, 2009). Children with FASD display poorer immediate recall of visual and verbal information than their typically developing peers, and they struggle with organization (Chasnoff, 2010; Kodituwakku, 2009). Slow information processing has been observed in individuals with FASD from infancy through adulthood (Kodituwakku, 2009), and the memory deficits associated with prenatal alcohol exposure are most significant in complex cognitive tasks that engage working memory (Burden et al. 2005). Working memory refers to the aspect of memory that temporarily stores and manipulates the information needed for the cognitive task at hand (Wyper & Pei, 2016), and working memory is limited by the amount of information that can be stored and the time it takes for that information to decay (Burden et al., 2005). Slower processing speeds cause greater loss

and decay of the information stored in working memory, which puts individuals with FASD at a significant disadvantage on effortful cognitive tasks that require more information storage (Burden et al., 2005).

As the complexity of a task increases, the reaction time of individuals with FASD increases and their performance on the task decreases (Burden et al., 2005; Kodituwakku, 2009). The study performed by Burden and associates found that prenatal alcohol exposure led to slower processing speeds on tasks involving effortful cognition, and individuals with FASD displayed a specific deficit in processing efficiency for number comparison tasks (2005). However, while reaction time and processing speed were substantially impaired on complex cognitive tasks, the study found no alcohol-related deficit in reaction time for an automatic processing task (2005). When given a Stroop color naming task, a simple speed-based task that does not require analytical judgment or make cognitive demands, children with prenatal alcohol exposure displayed no deficits in reaction time (Burden et al., 2005). Thus, the impairments in processing speed for individuals with FASD occur in the context of complex cognition, which engages working memory, but not in automatic processing (Burden et al., 2005). Working memory influences a great number of important tasks such as language processing and reasoning (Wyper & Pei, 2016).

Language

Individuals with FASD frequently experience delays in language development and problems with speech (Fast & Conry, 2004). Children with FASD often exhibit a delayed onset of articulation followed by frequent substitutions, omissions, and distortions in their speech (Witzel, 2016). Both expressive and receptive language skills are commonly impaired, meaning

that individuals with FASD have difficulty in both their ability to express themselves through the production of language forms and in their ability to comprehend verbal and nonverbal language (Burd et al., 2010; Fast & Conry 2009). While individuals with FASD may have learned to use an age-appropriate or a sophisticated vocabulary, this expression often surpasses their comprehension and understanding of the content; while they may understand individual words at a concrete level, they often struggle to organize these words into meaningful concepts (Brown et al. 2015; Fast & Conry 2004).

People with FASD tend to be chatty, but their verbal communication often lacks meaningful content (Brown, Gudjonsson, & Connor, 2011). Caregivers have described individuals with FASD as “enjoy[ing] talking, but the act of talking is more important than the content” and they “miss the fine points or subtleties in communication” (Brown et al., 2011, p. 43-44). While it may sound as if an individual with FASD is carrying on a complex and meaningful conversation, the individual with FASD may be mimicking verbal information that they have previously heard (Brown et al., 2011), and they may still be struggling to articulate their true thoughts and feelings and to understand others’ responses (Page, 2001). This superficial fluency and verbosity in expressive language may mislead others to view individuals with FASD as unimpaired and to falsely assume that individuals with FASD understand concepts and instructions just because they say that they do (Brown et al., 2012; Page, 2001; Fast & Conry 2004). People with FASD tend to interpret questions and statements literally, and this concrete interpretation of language leads to confusion and misunderstanding, particularly in the legal setting (Burd et al., 2010). Impairments in receptive language also extend to nonverbal skills. Individuals with FASD often experience difficulty reading social cues and may misinterpret the intentions of others (Brown et al., 2011; Burd et al., 2010).

Attention

Impairments in attention, impulsivity, distractibility, and hyperactivity have been found in 60-75% of individuals with FASD (Burd et al., 2010; Fast & Conry 2009). Streissguth and colleagues found that 70% of the youth and adults with FASD in their study experienced attention problems, and this attention deficit was a common contributing factor to those reporting disrupted school experiences (2004). Individuals with FASD who have problems with attention and impulsivity are prone to putting themselves in dangerous situations without consideration of the consequences (Fast & Conry, 2004). Though attention deficit hyperactivity disorder (ADHD) is a common comorbid diagnosis for youth with FASD (Burd et al., 2010), the areas of attention affected in children with a diagnosis of only ADHD differ from the areas of attention affected in children with FASD (Kodituwakku, 2009). The four components of attention include focus, sustain, encode, and shift; while children with ADHD struggle with focus, concentration on a particular task, and sustain, the ability to stay on task, children with FASD struggle with encode, the capacity to temporarily hold information in memory while performing a mental operation on it, and shift, the ability to shift attention between stimuli in a flexible manner, implying key differences in the areas of attention compromised by the two disorders (Kodituwakku, 2009).

Social Skills

Though individuals with FASD have little difficulty initiating social interaction, they struggle with appropriate social skills (Kodituwakku, 2009), and the absence of social intelligence is considered a defining characteristic of the population with FASD (Brown et al., 2011; Edwards & Greenspan, 2010). These deficiencies in social skills stem from deficits in executive functioning rather than a disinterest in socializing (Kodituwakku, 2009). Children with

prenatal alcohol exposure are as socially inclined as their typically developing peers, craving friendship and interaction (Chasnoff, 2010), but people with FASD have difficulty regulating their behavior to conform with socially appropriate norms (Kodituwakku, 2009). Streissguth, Bookstein, Barr, Press, and Sampson cite common comments made by parents and caretakers to describe the inappropriate social behaviors of their children with FASD, such as: “talks a lot but says little; is chatty but with shallow content,” “makes ‘off the wall’ comments; sometimes says things that seem completely out of context,” “overacts to situations,” and “often demands attention or monopolizes a conversation” (1998, p. 326).

The social skills of individuals with FASD are impeded by deficient self-regulation and deficits in higher-order executive functioning skills; impairments in decision-making and strategic planning create difficulties in social problem solving and social information processing (Kodituwakku, 2009). The impaired social intelligence of the population with FASD is compounded by difficulties in perspective taking (Edwards & Greenspan, 2010). People with FASD often have a poor understanding of personal boundaries, which contributes to their expression of socially inappropriate behaviors (Fast & Conry, 2009). Sensory deficits impair their concept of personal space, leading individuals with FASD to cross socially acceptable physical boundaries in a manner that can be interpreted as sexually inappropriate or aggressive (Chasnoff, 2010; Fast & Conry, 2009). Individuals with FASD are often immature, suggestible, and easily trusting, with a desire to please others (Brown et al., 2011; McLachlan et al., 2014). This poor social judgment is a contributing factor to the legal trouble experienced by much of the population with FASD, both as victims and defendants in criminal proceedings (Edwards & Greenspan, 2010).

As individuals with FASD get older, their social deficits become more pronounced (Brown et al., 2011; Edwards & Greenspan, 2010; Kodituwakku, 2009). The discrepancy between the individual's chronological age and society's age-equivalent social expectations continually increases with each year (Chasnoff, 2010), suggesting that the development of social skills may be arrested before adulthood and not simply delayed (Fast & Conry 2009). As children with prenatal alcohol exposure grow older, they struggle to maintain friendships with their peers who view them as "immature and babyish in their interests" (Chasnoff, 2010, p. 64). These deficits in social skills contribute to the development of depression, difficulty in the work place, and social isolation (Kodituwakku, 2009).

Secondary Disabilities

Fetal alcohol spectrum disorders are life-long disabilities (Brown et al., 2015; Chudley et al., 2007; Wyper & Pei, 2016). The cognitive and behavioral features of the disorders continue into adulthood, often becoming more pronounced as societal expectations of independence and responsibility increase (Wyper & Pei, 2016). Adolescents with FASD have difficulty performing age-expected daily living skills such as attending to their personal hygiene, completing daily chores, budgeting finances, and keeping a job (Chasnoff, 2010). With the passing of time, the developmental ability of individuals with FASD lags further and further behind their chronological age, creating a significant "ability-expectancy discrepancy" (Wyper & Pei, 2016, p. 104). As adults, many individuals with FASD struggle to maintain employment and live independently (Wyper & Pei, 2016).

As individuals with FASD grow older, their rates of secondary disabilities increase (Burd et al., 2010). Secondary disabilities are not present at birth but develop as a result of the

interaction between the effects of FASD and adverse environments (Burd et al., 2010; Chudley et al., 2007). Adverse situational factors, such as exposure to abuse, exacerbate the primary disabilities of FASD, the neurocognitive and behavioral difficulties, and contribute to the creation of secondary disabilities (Popova et al., 2011). Secondary disabilities include: mental health disorders, disrupted school experiences, trouble with the law, confinement, inappropriate sexual behavior, and substance use disorders (Streissguth et al., 1996), as well as unemployment, dependent living, and homelessness, all of which are risk factors for criminal justice involvement (Chudley et al., 2007; Popova et al., 2011). These secondary disabilities are potentially preventable or lessened through appropriate intervention and better understanding of FASD (Burd et al., 2010; Popova et al., 2011; Streissguth et al., 1996).

A significant risk factor for the development of secondary disabilities is a history of childhood abuse (Burd et al., 2010; Streissguth et al., 1996). Over 70% of youth with FASD have experienced some form of abuse, including physical, emotional, and sexual (Fast & Conry, 2009), and 60% have been sexually victimized (Thiel, Baladerian, Boyce, Cantos, Davis, Kelly, ... Stream, 2011). Children with FASD exposed to this kind of violence are four times as likely to display inappropriate sexual behaviors (Streissguth et al., 1996). In addition to being subject to abuse, children prenatally exposed to alcohol often grow up in high stress environments characterized by parental substance abuse, domestic violence, neglect, and poverty (Burd et al., 2010; Fast & Conry, 2004; Wyper & Pei, 2016). Many children with FASD are placed in foster care or group homes and lack a stable and consistent home environment (Fast & Conry, 2009). These adverse childhood conditions compound the neurocognitive impairments of youth with FASD and result in the formation of maladaptive coping skills and secondary disabilities (Brown et al., 2012).

Streissguth and her associates conducted a longitudinal study on secondary disabilities among adolescents and adults with FASD (Chasnoff, 2010; Streissguth et al., 1996).

Interviewing knowledgeable informants about the life histories of the 415 participants with FASD, Streissguth's team found a lifespan prevalence of 94% for mental health problems, 61% for disrupted school experiences, 60% for trouble with the law, 50% for confinement (in detention, jail, prison, or a psychiatric or alcohol/drug inpatient setting), 49% for inappropriate sexual behaviors on repeated occasions, and 35% for alcohol/drug problems (Streissguth et al., 1996; Streissguth et al., 2004). Brown and associates (2012) created the following bar graph (Figure 1) depicting the prevalence of specific secondary disabilities separated by age group among the 415 participants with FASD from Streissguth's 1996 study.

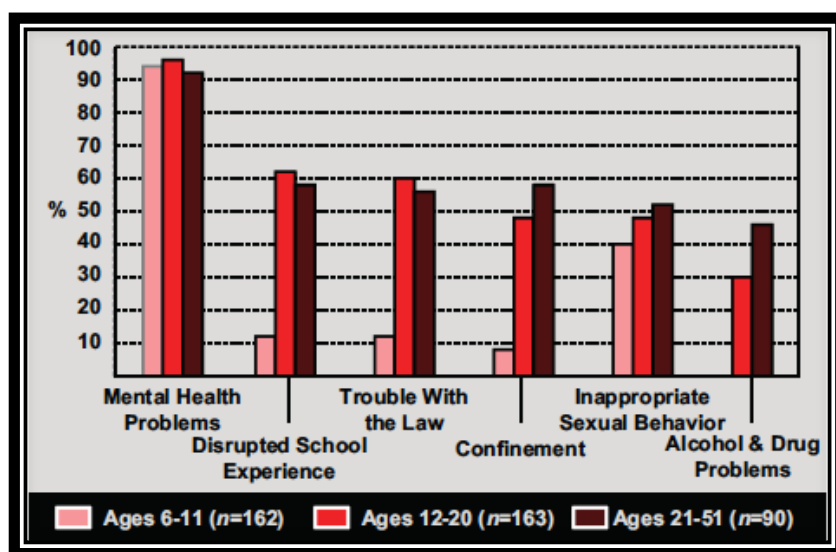


Figure 1: Prevalence Rates of Secondary Disabilities in Individuals with FASD as a Function of Age
 Source: Brown, N. N., Connor, P. D., & Adler, R. S. (2012), adapted from Streissguth, A. P., Barr, H. M., Kogan, J., & Bookstein, F. L. (1996).

Co-morbid mental health disorders are the most prevalent secondary disability for people with fetal alcohol spectrum disorders (Streissguth et al., 1996). Of the 415 individuals with

FASD involved in Streissguth et al.'s study (1996), 94% experienced mental health problems. The co-morbid mental health diagnoses included depression, ADHD, panic attacks, and psychotic disorders, and 43% of the participants had a history of suicide threats and 23% had made suicide attempts (Streissguth et al., 1996; Wartnik & Carlson, 2011). Additional co-morbid disorders, such as conduct disorder, oppositional defiant disorder, schizophrenia, and anxiety, can compound the cognitive and behavior features of FASD and are an important factor to consider during diagnostic assessment as they greatly influence daily functioning and can perpetuate cycles of destructive behavior (Brown et al., 2015; Burd et al., 2010; Fast & Conry, 2009; Wyper & Pei, 2016).

Having an IQ over 70 is a significant risk factor for developing secondary disabilities (Fast & Conry, 2004; Streissguth et al., 1996). Individuals with lower IQs are more likely to receive services and appropriate intervention, which puts people with ARND at greater risk for secondary disabilities than those with FAS (Streissguth et al., 1996). While the likelihood of developing secondary disabilities increases two-to-fourfold when the individual grows up in an unstable home environment and is not diagnosed with FASD until after age twelve (Chudley et al., 2007), early diagnosis and intervention coupled with growing up in a stable environment can help individuals with FASD escape these adverse life outcomes altogether (Streissguth et al., 2004).

Chapter One Summary

The teratogenic effects of alcohol on the developing brain result in the set of neurocognitive and behavioral features that characterize fetal alcohol spectrum disorders. FASD is a leading cause of developmental disability in the United States, but the majority of individuals with FASD go undiagnosed (May et al., 2018). The lack of identifying physical features makes ARND, the most common FASD, an invisible disorder (Chasnoff, 2010), and without a diagnosis the behavioral needs of affected individuals are likely to be interpreted as willful misconduct rather than as manifestations of a brain-based disorder (May et al., 2009). Impairments in executive functioning, adaptive behavior, memory, language, attention, and social skills place individuals with FASD at risk for criminal justice involvement and increase their vulnerability to mistreatment throughout the legal process (Fast & Conry, 2009).

Chapter Two: Realities of FASD in the Criminal Justice System

This chapter looks at the realities of criminal justice involvement for offenders with FASD. First the chapter discusses the disproportionate representation of individuals with FASD in the criminal justice system and then explores reasons for this population's increased susceptibility to CJS involvement. Executive functioning deficits, social naivety, and high suggestibility contribute to initial criminal justice involvement, and neurocognitive impairments continue to create problems for this vulnerable group of offenders throughout the legal process (Brown et al., 2010; Burd et al., 2010). This chapter chronicles how the neurocognitive and behavioral features of FASD adversely impact the experience of affected offenders during arrest, interrogation, interaction with counsel, trial, probation and parole, and incarceration. Offenders with FASD are prone to waiving their Miranda rights, succumbing to manipulative ploys during interrogation, giving false confessions or confabulating when testifying, violating probation and parole conditions, and being victimized in correctional facilities (Brown et al., 2015; Fast & Conry, 2009; Greenspan & Driscoll, 2016).

Prevalence of FASD in CJS

The American Bar Association reports "Children and adults with FASD are becoming involved in the justice system at an alarming rate" (ABA, 2012, p. 34). The prevalence of both juveniles and adults with FASD in the criminal justice system is disproportionately higher than the prevalence of FASD in the general population (Bisgard, Fisher, Adubato, & Louis, 2010; Brown et al., 2015; Burd et al., 2010; Fast & Conry, 2009; McLachlan et al., 2014; Wyper & Pei, 2016). As young people with FASD enter adolescence, their risk for criminal justice involvement

increases dramatically (Burd et al., 2010); Popova and associates found that youth with FASD were 19 times more likely to be incarcerated than their peers without FASD (Brown et al., 2015; Passmore et al., 2016; Popova et al., 2011, p. 339). Current survey data estimates that 15-20% of juvenile and adult offenders have a fetal alcohol spectrum disorder (McLachlan et al., 2014; Woods et al., 2011); however, the over-representation of people with FASD in the CJS likely exceeds this estimate since most cases of FASD go undiagnosed, particularly in correctional settings (Bisgard et al., 2010; Burd et al., 2010; Fast & Conry, 2004; McLachlan et al., 2014; Woods et al., 2011).

As previously discussed, 60% of the individuals with FASD in Streissguth and associates' study faced trouble with the law during their lifetime, and 35% had been incarcerated (Fast & Conry, 2004; Mela, 2016, 123; Streissguth et al., 1996; Streissguth et al., 2004; Wyper & Pei, 2016). Lacking the facial characteristics associated with prenatal alcohol exposure and being male significantly increased the risk of experiencing trouble with the law among the study participants (Streissguth et al., 2004). Given these statistics, the diagnosis of a fetal alcohol spectrum disorder is predictive of a high risk for criminal justice involvement and confinement (Chudley et al., 2007).

Susceptibility to CJS Involvement

The compound effect of vulnerability to social pressure, inability to connect cause and effect, severely compromised impulse control, and difficulty with communication increases the susceptibility of individuals with FASD to criminal justice involvement (Brown et al., 2010; Chasnoff, 2010; Fast & Conry, 2009; Wyper & Pei, 2016). Caregivers of people with FASD have described this group of individuals as “too easily led by others,” “impulsive,” “unaware of

the consequences of their behavior,” “not foreseeing potential danger” and “[having] poor judgment in whom they trust” (Brown et al., 2011, p. 43; Passmore et al., 2016); all of these characteristics have clear implications for potential encounters with the criminal justice system.

Executive functioning impairments also play a prominent role in leading individuals with FASD to involvement with the justice system (Mela, 2016; Wyper & Pei, 2016). People with FASD tend to have poor decision-making abilities, which make them more likely to engage in high-risk behaviors, and they experience difficulty in connecting their actions to future consequences, including potential conflicts with the law (Pei, Leung, Jampolsky, & Alsbury, 2016). The judgment problems associated with impaired executive functioning lead individuals with FASD to exhibit a high frequency of “foolish behaviors” (Greenspan, 2008, p. 178). People with FASD lack the foresight necessary to avoid high-risk, low-gain situations (Brown et al., 2012; Pei et al., 2016), and they are prone to acting and reacting impulsively (Burd et al., 2010; Fast & Conry, 2009; Mela, 2016). A combination of executive functioning deficits, including poor adaptive functioning skills, cognitive inflexibility, perseveration, inability to understand causal relationships, and impulsivity, negatively impact the ability of individuals with FASD to adhere to socially acceptable behaviors and increase their risk of CJS involvement (Mela, 2016; Passmore et al., 2016; Wyper & Pei, 2016).

Vulnerability to Manipulation

Social vulnerability, particularly high levels of suggestibility and susceptibility to manipulation by others, is a major factor contributing to criminal justice involvement for people with FASD (Brown et al., 2011; Greenspan & Driscoll, 2016; Wyper & Pei, 2016). Due to their poor social intelligence, or limited interpersonal knowledge, people with fetal alcohol spectrum

disorders tend to be overly trusting of others, which allows them to be easily misled or coerced into actions with adverse consequences for themselves (Brown et al., 2012; Burd et al., 2010; Greenspan, 2008; Passmore et al., 2016). The neurocognitive limitations associated with PAE increase the risk that people with FASD will be taken advantage of by individuals who encourage participation in maladaptive or deviant behaviors (Chasnoff, 2010). Though lacking in social skills, people with FASD desire to be accepted and to have friends, so they tend to mimic or accede to the requests of others, including delinquent peers who find people with FASD easy to manipulate (Fast & Conry, 2009; Greenspan & Driscoll, 2016). Youth with FASD try to gain peer approval by over-representing their abilities and fabricating unrealistic stories, displaying social vulnerability that unimpaired youth pick up on and take advantage of (Brown et al., 2012; Page, 2001).

Adolescents who have impaired executive functioning and who lack the ability to think through their actions make good candidates for gang-related activities that carry the highest risk of interception by law enforcement or of getting hurt (Page, 2001). Gang leaders find youth with FASD eager to please and easy to persuade into misconduct (Brown et al., 2012; Thiel et al., 2011). Out of their desire to be liked and accepted, individuals with FASD will often unquestioningly follow the directions of those they consider friends, even when this leads to incriminating situations (Fast & Conry, 2009). The influence of others is often a contributing factor when individuals with FASD commit offenses (Fast & Conry, 2004). People with FASD are at high risk for secondary victimization; offenders will use people with FASD as pawns to commit a crime they know little or nothing about for the benefit of the perpetrator, who often flees the crime scene, leaving the individual with FASD to be arrested and prosecuted (Thiel et al., 2011). Individuals with FASD lack the skills needed to be socially aware of deceptive

situations and to determine what actions are in their best interest (Greenspan & Driscoll, 2016). A youth with FASD can be easily persuaded by a “friend” to carry a brown bag to a certain location, unknowingly becoming the middleman in a drug deal and the one prosecuted if intercepted by the police. Since individuals with FASD are unable to learn from past experiences, they will likely return to these “friends” only to be used by them again in subsequent criminal activity (Thiel et al., 2011).

The story of “Tom” provides an example of how people with FASD are often naïve offenders, coerced into criminal involvement without a full understanding of what is going on (Greenspan, 2008). As a 19-year-old with FASD, Tom was asked by his uncle to come along on a ride; unknown to Tom, his uncle planned to break into the home of a woman who supposedly kept cash inside her house. When the two arrived at the house, the uncle ordered Tom to keep lookout. The uncle broke in, discovered the woman was home, and killed her. Despite being duped into participating and having no history of violence, Tom was convicted of murder (Greenspan, 2008, p. 180). Similar to Tom, “Carlos” was a 14-year-old with FASD brought along on a drug deal that turned into a shooting (Chasnoff, 2010). After firing a fatal shot, the person Carlos had accompanied handed him the gun and said, “Hold this for me, will ya?” Eager to please, Carlos took the gun, only to be found holding the murder weapon when the police arrived; he was charged with the murder (Chasnoff, 2010, p. 70).

Common Offenses

Despite the violent nature of the previous two case examples, the typical pattern of crime for individuals with FASD is a nonviolent offense followed by repeated failure to comply with parole conditions (Chudley et al., 2007). According to Streissguth’s study, the onset of trouble

with the law for people with FASD started at a mean age of 12.8 (Streissguth et al., 2004), and shoplifting was the most common first documented crime (Brown et al., 2010; Mela, 2016). In addition to theft and shoplifting, other common crimes committed by individuals with FASD include assault, drug offenses, probation or parole violations, illegal sexual behavior, running away, and vandalism (Brown et al., 2010; Fast & Conry, 2009).

Executive functioning deficits in impulse control and poor boundary awareness contribute to individuals with FASD taking things that do not belong to them, breaking the rules, and touching others inappropriately; additionally, most people with FASD do not comprehend the social and legal significance of these actions (Brown et al., 2012). Items stolen or shoplifted by individuals with FASD are often of little value (Brown et al., 2010); for example, a pre-adolescent boy with FASD may walk by a stand of candy bars and impulsively grab one because he wanted to eat it in that moment, without considering the consequences or the fact that the candy bar was not his to take. Extending this example to a more serious criminal offense, Burd and associates provide the anecdote of a man with a fetal alcohol spectrum disorder holding up a stranger on the street and demanding his cellphone—when confronted by the authorities, the man with FASD insisted “it was not stealing because he gave it to me” (Burd et al., 2010, p. 573). This man demonstrates the “black and white” reasoning of individuals with FASD, who rely on concrete thought processes and do not understand abstract concepts (Chasnoff, 2010, p. 60).

Due to their impulsivity and challenges with self-regulation, individuals with FASD are prone to reactive aggression, which occurs in response to the anger and fear elicited by real or perceived provocation, frustration, or threat (Brown et al., 2012). Youth with FASD often exhibit reactive aggression after provocation from peers or confrontation by adults, and the intention of impulsive reactive aggression is to harm the individual considered the source of distress (Brown

et al., 2012). Additionally, having been a victim of sexual abuse, physical abuse, and/or violence increases the likelihood that individuals with FASD will perpetrate these behaviors (Streissguth et al., 2004). As previously discussed, over 70% of youth with FASD have been subjugated to some type of abuse, and 60% have been sexually abused, significantly increasing their likelihood of exhibiting sexually inappropriate behaviors (Fast & Conry, 2009; Streissguth et al., 2004; Theil et al., 2011).

Individuals with FASD tend to cycle through the CJS after initial conviction due to their impairments in judgment and reasoning (Burd et al., 2010; Page, 2001). Frequent causes of recidivism among people with FASD are breaching parole conditions, violating curfew, associating with the wrong people, truancy, and shoplifting (Mela, 2016; Page, 2001) — “unsophisticated crimes” in the words of Mela (2016, p. 124).

Vulnerabilities Throughout the Legal Process

Despite the over-representation of individuals with FASD in the CJS, this system is poorly suited to meet the needs of offenders affected by PAE (Wyper & Pei, 2016). The criminal justice process assumes that offenders act of their own volition, choosing to commit a crime with full knowledge of the wrongfulness of their actions, and are aware of and learn from the consequences of their own behavior or the behavior of others—assumptions that do not hold for offenders with FASD (Thiel et al., 2011). Offenders with FASD may not understand the illegality of the actions or how their actions led them to criminal justice involvement (Pei et al., 2016; Watnick & Carlson, 2011). Individuals with FASD may be accused of crimes that they did not commit but still confess to, and some individuals with FASD confess to crimes that never happened and still are convicted (Wartnick & Carlson, 2011).

Due to the outward invisibility of their brain damage, people with FASD get lost in the criminal justice system (Chudley et al., 2007). The cognitive challenges of affected offenders are hidden by their typical appearances and superficially competent language skills (Mela, 2016; Wyper & Pei, 2016); furthermore, individuals with FASD are often unaware of their own limitations, over-representing their capabilities to others and themselves (Chudley et al., 2007). Without adequate services in place to screen for, identify, and treat offenders with FASD in the CJS (Burd et al., 2004; Chudley et al., 2007), nearly all individuals with FASD in correctional systems are undiagnosed (Burd et al., 2010; Burd et al., 2004), and a significant number of defendants pass through the system and are regularly convicted without any acknowledgment that they have brain damage from PAE (Brown et al., 2010). When criminal justice personnel are unaware of the presence of FASD in offenders and the implications of the disorders, individuals with FASD are subject to misunderstanding and victimization throughout criminal prosecution (Fast & Conry, 2004).

Individuals with FASD are a vulnerable group of offenders due to the neurocognitive features of FASD, particularly heightened suggestibility and challenges with language, which limit their ability to competently navigate the criminal justice system (Brown et al., 2010; McLachlan et al., 2014; Pei et al., 2016). The suggestibility of individuals with FASD allows interrogators to easily manipulate their responses through the use of pseudo-factual deceptive ploys, which leads to an increased likelihood of false confession (Brown et al., 2011; Greenspan & Driscoll, 2016). Language deficits impact every stage of the legal process from the initial interaction with law enforcement and understanding of the Miranda waiver, to responses during interrogation and communications with lawyers, to understanding of basic legal terms such as “guilty” and “not guilty” and the implications of the judge’s rulings (Burd et al., 2010; Fast &

Conry, 2009; Hand, Pickering, Kedge, & McCann, 2016).

The basic rights of individuals with FASD may be jeopardized throughout the criminal prosecution process as individuals with FASD are prone to waiving their legal rights to silence and counsel, acquiescing with statements and questions by police and lawyers, and giving inaccurate testimonies and false confessions (Brown et al., 2011; Brown et al., 2010; Fast & Conry, 2009; McLachlan et al., 2014; Wyper & Pei, 2016). Individuals with FASD tend to have a limited understanding of the legal process (Brown et al., 2010; Pei et al., 2016). McLachlan and associates found significant psycholegal impairment in a high proportion of young offenders with FASD; psycholegal impairment refers to poor understanding and appreciation of Miranda rights and compromised adjudication capacities, including limits in factual knowledge of criminal procedure, understanding of proceedings, ability to participate in defense, and communication with counsel (McLachlan et al., 2014, p. 18; Wyper & Pei, 2016). The fair treatment of individuals with FASD is compromised throughout their interaction with the criminal justice system (Burd et al., 2010); the neurocognitive features of FASD impact arrest, interrogation, assistance to counsel, trial, probation and parole, and incarceration.

Initial Contact/Arrest

During their initial encounter with the police, individuals with FASD may not be able to provide a credible explanation for their situation, whether or not they have committed a crime, and they may struggle to process the instructions given to them by law enforcement personnel (Hand et al., 2016; Mela, 2016). Sensory sensitivity, particularly a low sensory threshold to touch, impaired processing, and lack of risk awareness can lead individuals with FASD to resist arrest or struggle with police officers, which can escalate outcomes from simple arrest to charges

of resisting arrest, assault of an officer, or even the fatality of the individual with FASD (Mela, 2016). However, the main issue during arrest for people with FASD is their susceptibility to a quick and impulsive waiving of their rights, often followed by self-incriminating statements without an appreciation of when they should remain silent (Brown et al., 2011; Fast & Conry, 2004; Roach & Bailey, 2009).

McLachlan and associates found that offenders with FASD displayed substantial deficits in the comprehension of their arrest rights, including the right to remain silent, the potential use of their statements in court, the right to counsel prior to and during interrogation, and the right to free counsel (McLachlan et al., 2014, p. 15). Individuals with FASD have difficulty understanding the abstract terms and implications of the Miranda waiver (Brown et al., 2010; Fast & Conry, 2004; McLachlan et al., 2014), but they are still likely to suggest that they understood the warnings in order to “not to look stupid in front of everyone” (Mela, 2016, p. 130). People with FASD are prone to agreeing when they do not understand what was asked, and their desire to please people in authority leads them to giving the response that they think the police officers want to hear (Fast & Conry, 2009).

The Miranda warnings are intended to inform individuals in custody of their Constitutional rights and are presented in a process that assumes oral comprehension, reading ability, and self-serving motivation, all of which are lacking for individuals with FASD (Brown et al., 2011). The neurocognitive impairments of individuals with FASD interfere with their understanding of verbal statements, their reading comprehension, and their ability to weigh the pros and cons of waiving their rights (Brown et al., 2011). Individuals with FASD often have a poor appreciation of the long term consequences of cooperating with the police (Roach & Bailey, 2009), and the “friendly” suggestions of police officers lead individuals with FASD to minimize

the significance of the Miranda waiver and subsequent interrogation statements (Brown et al., 2011, p. 42; Fast & Conry, 2004).

Interrogation

The suggestibility and gullibility of individuals with FASD becomes particularly evident during interrogative situations (Brown et al., 2011). Overly trusting, they may believe that the detective's only motive is to rule out culpability, and innocent suspects with FASD are still likely to believe detectives who claim to have incriminating evidence against them (Brown et al., 2011). Although individuals with FASD may challenge authority figures at home or school, they tend to comply with and try to please authority figures in custodial settings (Brown et al., 2011; Fast & Conry, 2009; Theil et al., 2011). When presented with initial friendliness by the detective, suspects with FASD are easily led to believe that maintaining the esteem of the interrogator, rather than staying out of jail, is the goal of the interaction (Greenspan & Driscoll, 2016). Suspects with FASD will watch for clues from the detective to guess what he or she wants to hear (Fast & Conry, 2009), and they tend to incorporate the interrogator's suggestions of what "might have" happened into their own telling of events out of a desire to please the interrogator (Brown et al., 2011, p. 40; Theil et al., 2011).

Individuals with FASD often have a poor understanding of the purpose of interrogation, particularly when detectives minimize or obscure the true nature of the proceedings (Greenspan & Driscoll, 2016). Suspects with FASD may believe that by answering or agreeing to the interrogator's questions, they are helping in the investigation or will be released to go home (Brown et al., 2011; Fast & Conry, 2009). Particularly when interrogations turn stressful, suspects with FASD tend to make impulsive decisions that are not in their best interest, and they

will answer questions with whatever responses seem to satisfy the interrogator in order to relieve the immediate stressor of the questioning (Brown et al., 2011). They make take the blame or confess too quickly under the impression that this will allow them to go home (Fast & Conry, 2004; Fast & Conry, 2009). Under the pressure and stress of police interrogation, people with FASD are likely to become exhausted, break down, and confess to what is being asked, regardless of their culpability (Brown et al., 2011; Fast & Conry, 2009). Suspects with FASD may not understand that false confessions cannot later be retracted (Brown et al., 2011; Fast & Conry, 2009).

Lacking the social awareness of potentially deceptive situations, individuals with FASD, like people with other intellectual and developmental disabilities, are easily persuaded into giving a false confession during interrogation (Brown et al., 2011; Greenspan & Driscoll, 2016; Roach & Bailey, 2009) This population tends to agree with leading questions and will change their answers in response to negative feedback or pressure from the interrogator (Brown et al., 2011; Fast & Conry, 2009). People with FASD are also highly vulnerable to the manipulative methods and deceptive questioning ploys used by detectives to elicit confession during interrogation (Greenspan & Driscoll, 2016). Greenspan and Driscoll describe an interrogation as “basically a situation in which an interrogator develops a story and tries to convince a subject to buy into and even elaborate on that story” (2016, p. 32). Individuals with FASD have difficulty distinguishing fact from fiction (Page, 2011; Theil et al., 2011), and suspects affected by PAE tend to assume that statements made by interrogators are accurate (Brown et al., 2011). They readily believe that the interrogator’s account of their behavior is what occurred (Greenspan & Driscoll, 2016). Suspects with FASD are likely to fall for the interrogative ploys of lying about incriminating evidence and of mixing true, hypothetically true, and false statements (Greenspan

& Driscoll, 2016). Innocent suspects with FASD believe detectives who claim the police have incriminating evidence against them and suggest they might as well confess (Brown et al., 2011; Greenspan & Driscoll, 2016).

Greenspan shares the case of a false confession from “Stan,” a young man with FASD suspected of participating in a murder and brought in for police questioning. Like many individuals with FASD, Stan waived his Miranda rights to silence and to an attorney, and he tried to explain his innocence to the police. However, the interrogator used a deceptive ploy and told Stan that he failed a lie detector test and faced a death sentence unless he confessed, so Stan signed a statement dictated to him that affirmed his guilt (2008, p. 181). Another young man with fetal alcohol syndrome confessed to a double murder that he could not possibly have committed as he was incarcerated at the time; however, he repeated the story that the police had told him during interrogation and was incarcerated for 11 months (Fast & Conry, 2004, p. 163).

The memory impairments associated with FASD compound the suspects’ susceptibility to manipulative ploys and also increase the likelihood of unreliable testimonies and false confessions (Brown et al., 2011; Fast & Conry, 2004). Memory deficits become more pronounced with complex events and as more time passes from the initial event, and individuals with FASD tend to confuse the sequence of events and details of time in their recollections and testimonies (Burd et al., 2010). The sporadic memory recall of people with FASD increases their uncertainty of past events and leads to confabulation, which significantly compromises the accuracy of their statements (Brown et al., 2011; Fast & Conry, 2004).

Believing that they are expected to know the answers to the interrogator’s questions, suspects with FASD are reluctant to admit when they have no knowledge or memory of the question being asked (Brown et al., 2011); this leads individuals with FASD to confabulate, or to

fill in the gaps in their memory of events by combining elements of truth with inaccurate recollections from unrelated past or fictional events (Brown et al., 2011; Fast & Conry, 2009). Individuals with FASD may confuse the events that really happened with stories they have heard about or seen on TV (Burd et al., 2010). Suspects with FASD are likely to incorporate suggestions and scenarios provided by law enforcement into their retelling of past events, particularly when unable to remember offense-related details (Brown et al., 2010; Burd et al., 2010; Fast & Conry, 2004; Roach & Bailey, 2009; Theil et al., 2011). Impairments in memory and the tendency to confabulate jeopardize the accuracy of statements made by individuals with FASD in the legal setting. Though few cases are tried in court, individuals with FASD often provide unreliable testimony during trial due to their suggestibility, propensity for false confession, and likelihood of confabulation (Burd et al., 2010; Fast & Conry, 2009; Roach & Bailey, 2009; Wartnik & Carlson, 2011).

Assistance to Counsel

As discussed earlier, individuals with FASD are prone to waiving their right to counsel during interrogation and the pre-trial phase of the legal process (McLachlan et al., 2014). When appointed an attorney during trial, defendants with FASD face challenges in effectively assisting their counsel in their defense (Brown et al., 2010; Theil et al., 2011). The memory deficits that make it difficult for individuals with FASD to provide coherent, sequential, and detailed recollection of past events also compromise the ability of defendants with FASD to remember instructions from their lawyers (Burd et al., 2010), and they are likely to forget important defense-related information between interviews (Brown et al., 2010). Executive functioning deficits in cause and effect may interfere with their ability to evaluate the strategic advice of their

attorney (Theil et al., 2011). McLachlan and associates found that young defendants with FASD had a limited ability to participate in their defense and difficulties communicating with their legal counsel (Fast & Conry, 2004; McLachlan et al., 2014).

Though the language and processing deficits associated with FASD affect prenatally exposed defendants' understanding of questions and ability to provide answers, the superficial talkativeness of individuals with FASD may lead lawyers to overestimate their level of understanding and overall competence (Fast & Conry, 2009). Individuals with FASD often attempt to mask their comprehension difficulties by mimicking responses or being compliant, which prevents their lawyers from discerning their challenges as well as their true desires or intentions (Pei et al., 2016). In an interview with Pei and colleagues, a legal professional with clients who have FASD said, "many of them present as completely comprehending what's going on and so it's only later on that I find that they actually haven't understood what's going on" (Pei et al., 2016, p. 68).

Individuals with FASD tend to have limited awareness of their lack of legal knowledge and thus express misplaced confidence in their decision-making skills to their lawyers (McLachlan et al., 2014; Pei et al., 2016). Individuals with FASD are at risk for making poor decisions due to their limited understanding of their rights (McLachlan et al., 2014), including the concept of lawyer-client privilege, which means defendants with FASD are apt to openly disclosing their private communications with their attorney (Fast & Conry, 2009).

Trial

Fitness to stand trial may be an issue for defendants with FASD (Fast & Conry, 2009). A diagnosis of a fetal alcohol spectrum disorder does not necessarily mean that the defendant is

unfit to stand trial on account of mental disorder, but having a FASD and an IQ above 70 does not mean that the individual is unquestionably fit to stand trial; the capacities of defendants with FASD need to be carefully assessed (Fast & Conry, 2009; McLachlan et al., 2014). Even though individuals with FASD may not demonstrate overt symptoms of mental illness, such as psychosis or a delusional understanding of the trial process, they are likely to have significant cognitive and behavioral challenges that compromise their competence in court; however, the relatively compliant and cooperative demeanor of defendants with FASD results in evaluators paying less attention to their deficits (McLachlan et al., 2014). Unless the defendant was previously identified as having a FASD, relatively few attorneys are willing to recognize FASD as a possible diagnosis, particularly if the individual lacks the characteristic physical features of PAE (Greenspan et al., 2016). Contrary to the belief of most courts, defendants with FASD who have IQs above the intellectual disability range (70-75) still may not appreciate the severity of their offense or the resulting consequences (Fast & Conry, 2009).

Rational understanding of the legal process is impaired for many individuals with FASD, which places them at a disadvantage during their hearing and sentencing (Brown et al., 2010; McLachlan et al., 2014; Pei et al., 2016). Compared to young offenders without PAE, youth with FASD experience more difficulty understanding the elements of the trial process, appreciating the possible consequences of the proceedings, and adequately participating in their own defense (McLachlan et al., 2014). Defendants with FASD may not understand their role in the court proceedings, the nature of the charges against them, or the implications of their plea (ABA, 2012; Fast & Conry, 2009; Fast & Conry, 2004). Language and processing difficulties may impair the ability of defendants with FASD to follow the interchanges of a courtroom proceeding, while difficulty distinguishing between reality and fiction may affect their ability to

assist their attorney in evaluating and responding to testimony (Theil et al., 2011). Another legal professional interviewed as part of Pei et al.'s study described how neurocognitive challenges affect the courtroom experience of individuals with FASD: "Their [the defendants with FASD's] brain is not working the same way . . . their capacity to involve themselves in the justice system right from understanding why they're there, what it's all about, what their role is, how they're to tell what happened . . . their capacity is not the same" (Pei et al., 2016, p. 68).

Probation and Parole

Convicted individuals with FASD have difficulty complying with the conditions of probation and parole (Brown et al., 2015; Passmore et al., 2016). Due to challenges with language and understanding abstract concepts, individuals with FASD need their probation orders to be written clearly using simple and concrete language, and judges should have accused individuals with FASD repeat their probation orders and explain the meaning of the orders to check for comprehension (Brown et al., 2015; Fast & Conry, 2009; Mela, 2016). However, even when individuals with FASD understand the meaning of their probation or parole orders, they are often unable to adhere to these conditions in the community without constant supervision (Fast & Conry, 2009). Impairments in executive functioning and memory, particularly with planning ahead and estimating time, make it difficult for people with FASD to comply with stringent probation or parole conditions that require meeting in unfamiliar places and adhering to specified times (Burd et al., 2010; Passmore et al., 2016). These challenges can lead to misunderstandings between the offenders with FASD and their probation or parole officers (Mela, 2016). Individuals with FASD are susceptible to missing scheduled probation or parole appointments, which results in a breach of conditions and potential incarceration (Burd et al.,

2010; Passmore et al., 2016). Without being identified and sentenced as offenders with brain damage and neurocognitive differences, offenders with FASD typically break promises, fail to appear at their scheduled meetings, and ignore their probation or parole orders (Page, 2001), all of which keep them cycling through the criminal justice system (Pei et al., 2016).

Among participants of Pei and colleagues' study, individuals with FASD who had been in and out of correctional facilities numerous times were primarily re-incarcerated because of breaches of parole conditions (Pei et al., 2016). Re-entry to the community on parole is particularly challenging for individuals with FASD who require high levels of structure and guidance (Burd et al., 2010); people with FASD struggle to navigate complex service qualification systems and to meet their parole requirements without external support, often resulting in recidivism (Brown et al., 2015).

Incarceration

The neurocognitive and behavioral impairments associated with FASD continue to disadvantage convicted individuals within correctional settings (Brown et al., 2015). Individuals with FASD are at high risk for victimization by the other prisoners (Fast & Conry, 2004). Inmates with FASD are particularly vulnerable to physical, sexual, and emotional abuse when confined in jail or prison (ABA, 2012; Fast & Conry, 2004; Mela, 2016) and are often the victims of inappropriate and unwanted sexual encounters (Brown et al., 2015; Burd et al., 2010). Inmates without FASD further exploit affected individuals by persuading them to participate in illicit activities (Chudley et al., 2007; Mela, 2016). Mirroring the manipulative situations that may have led to initial criminal justice involvement for people with FASD, unimpaired inmates turn their fellow inmates with FASD into the prison scapegoats, taking advantage of their naivety

and desire to fit in and be liked (Fast & Conry, 2004; Mela, 2016). Inmates with FASD are unaware of risk and willing to be used, which makes them the ideal pawns for more sophisticated prison gang members, and they often end up as the “errand boys” in contraband trade (Mela, 2016, p. 128). When caught by prison officials, the individuals with FASD receive the brunt of the disciplinary action, including elongated sentences, whether or not they were setup (Mela, 2016).

Though the structure and routine of life in correctional facilities may seem to be potentially beneficial for offenders with FASD, custodial environments are noisy, over-stimulating, and require the quick learning of new coping skills (Chudley et al., 2007; Fast & Conry, 2004; Fast & Conry, 2009). Inmates with FASD have trouble understanding and following the rules, and their actions are often misinterpreted as lazy, irritating, and self-defeating by staff unfamiliar with fetal alcohol spectrum disorders (Brown et al., 2015; Fast & Conry, 2004). Due to their executive functioning deficits and impaired comprehension of written rules and verbal instructions, individuals with FASD may repeatedly violate regulations without any apparent gain or motivation (Burd et al., 2010). Particularly when inmates lack a diagnosis, staff may interpret their difficulty understanding the rules and trouble with communication as willful non-compliance, rather than neurocognitive limitation (Chudley et al., 2007; Fast & Conry, 2009). This misunderstanding over the nature of behaviors results in punitive measures taken against inmates with FASD for impairments beyond their control, and inmates with FASD may spend long periods in solitary confinement or have their parole revoked only to then repeat the behaviors that led to their punishment in the first place (Chudley et al., 2007; Fast & Conry, 2009).

Chapter Two Summary

The neurocognitive features of fetal alcohol spectrum disorders, particularly deficits in executive functioning, language, memory, and social skills, increase susceptibility to criminal justice involvement for individuals affected by prenatal alcohol exposure. People with FASD are disproportionately represented in the criminal justice system, and over half of all individuals with FASD encounter the CJS at some point in their life (Bisgard et al., 2010; Streissguth et al., 2004). The majority of these offenders enter, leave, and re-enter the criminal justice system undiagnosed and go through the legal process without acknowledgement of their brain-based impairments (Brown et al., 2010; Burd et al., 2010). Offenders with FASD are continually disadvantaged in a criminal justice system that fails to meet their needs. The neurocognitive profile of offenders with FASD inclines them to waive their rights when taken into custody, to acquiesce with interrogators' pseudo-factual ploys, to confabulate while testifying, to give false confessions, to miscommunicate with their counsel, to breach conditions of conditional release, and to be taken advantage of by other inmates once incarcerated. Misunderstood and victimized by the current legal system, many offenders with FASD return to the community worse off than when they left, and without rehabilitation services that accommodate their neurocognitive impairments, many of these individuals recidivate and cycle through the CJS again (Brown et al., 2012; Fast & Conry, 2004).

Chapter Three: Discussion and Solutions

Chapter three begins by identifying key issues contributing to the vulnerability of individuals with FASD in the criminal justice system. Based on conclusions drawn from the review of the literature in chapters one and two, this section discusses the current limits in screening and diagnostic capacities, the unfamiliarity of criminal justice personnel with fetal alcohol spectrum disorders, and the ineffectiveness of punitive sentences for offenders with FASD. The next section of the chapter proposes solutions to these issues and explores the potential benefits of increasing screening for FASD among young children and the offender population, educating criminal justice professionals on the implications of FASD in the legal setting, and implementing community-based alternative sentences for offenders with FASD. Chapter three concludes by identifying areas related to FASD and CJS involvement that would benefit from further empirical research.

Discussion of Key Issues

Based on the synthesis and review of relevant literature in the previous chapters, three key issues contributing to the vulnerability experienced by individuals with FASD in the criminal justice system have been identified: the underdiagnosis of individuals affected by prenatal alcohol exposure, limited knowledge about FASD among criminal justice professionals, and ineffective sentencing measures for offenders with FASD. Without a diagnosis to validate the existence of organic brain damage, many individuals with undiagnosed FASD will not receive support services and may not have their specific neurocognitive needs recognized and advocated for in the home and school environments, setting up undiagnosed individuals for

adversarial experiences, including potential trouble with the law. Lack of education about the presence of fetal alcohol spectrum disorders among the offender population and misinformation about the implications of FASD contribute to the mistreatment of individuals with FASD by criminal justice personnel throughout the legal process. Finally, sentencing methods that focus on punishment over rehabilitation and that fail to recognize and accommodate the neurocognitive features associated with FASD make offenders with FASD vulnerable to reoffending and repeating involvement in the CJS.

Underdiagnosis of FASD

The underdiagnosis of fetal alcohol spectrum disorders is a significant factor contributing to the vulnerability experienced by affected individuals throughout their lifetime. An estimated 80% of children with FASD do not receive a diagnosis (May et al., 2018) and go through their lives without anyone recognizing the neurological basis of their cognitive and behavioral differences. Most individuals with FASD look like their typically developing peers and have low average-to-average IQs; without a diagnosis, families, schools, and the criminal justice system will expect a higher level of functioning than many individuals with FASD are capable of providing without external support. The behaviors of undiagnosed individuals with FASD may be misunderstood as willfully defiant or purposefully self-defeating, and these individuals are unlikely to receive the appropriate support for their cognitive and behavioral needs at home and in the community.

Undiagnosed individuals affected by PAE are even more susceptible to mistreatment and to being unknowingly taken advantage of by others who are unaware of their neurocognitive differences. Not having a diagnosis of FASD increases the vulnerability of offenders affected by

PAE throughout their CJS involvement. Though they function on a level much closer to young children, these offenders often look like typical adolescents and adults and have average range IQs (Brown et al., 2012). Without formal recognition of their brain damage from PAE, their cognitive and behavioral needs are much less likely to be acknowledged and appropriately accommodated in the CJS. If professionals in the criminal justice setting are not aware that the defendant in question has organic brain damage, they will likely presume full comprehension of Miranda rights, use typical manipulative methods of interrogation, and assume competency to assist in one's defense and stand trial. A diagnosis of FASD alerts criminal justice professionals to the possibility of language deficits, suggestibility, poor decision-making skills, memory impairments, and confabulation even when interacting with individuals who have superficial language skills and exaggerate their own capabilities.

Lack of a diagnosis adversely affects individuals with FASD before their involvement with the legal system as well. Undiagnosed children are unlikely to receive early intervention services or special education support in school, and families may not understand the cause of their child's developmental delays and behavioral challenges. A FASD diagnosis would direct the attention of families and teachers to the specific needs of children affected by PAE, particularly their vulnerability to manipulation, social exploitation, and suggestibility. When families and teachers are aware of these characteristics in addition to the child's impulsivity, inability to connect cause and effect, and difficulties with communication, they can create a more protective and supervised home and school environment, which can help prevent these impairments from leading to CJS involvement. Without a diagnosis, children with PAE may be perceived as behavior problems and academic failures, which can lead to low self-esteem and frequent punishment at school and home. Early diagnosis can shift this paradigm so that children

with FASD are viewed as having brain damage outside of their control with their cognitive and behavioral needs best addressed through support services and intervention, not punitive measures.

Limited Knowledge of CJS Professionals

Criminal justice professionals who are unaware of the unique needs and behavioral profiles associated with fetal alcohol spectrum disorders contribute to the vulnerabilities experienced by people with FASD throughout the legal process, regardless of whether or not the offenders have a diagnosis at intake. When the justice personnel working with offenders who have FASD do not understand the cognitive implications and behavioral manifestations of these disorders, individuals with FASD are subject to mistreatment and misunderstanding while in the CJS. Criminal justice personnel with limited knowledge about FASD may exploit the neurocognitive impairments of affected offenders and jeopardize their basic rights by quickly presenting the Miranda waiver without taking additional steps to confirm comprehension, utilizing manipulative ploys to elicit confession during interrogation, providing pseudo-factual or false accounts of offense-related information, and incarcerating offenders with FASD in the same correctional environment as unimpaired inmates. Additionally, when setting probation or parole conditions that disregard the neurocognitive differences of offenders with FASD, criminal justice personnel substantially increase the risk of violations and revocation. Probation and parole officers with minimal understanding of FASD are likely to be frustrated by individuals with these disorders who repeatedly forget scheduled meetings, have a poor concept of time, and have difficulty following the conditions of their community release without constant direct supervision.

The limited education of criminal justice personnel on FASD has also led to a number of misconceptions that minimize the severity and prevalence of fetal alcohol spectrum disorders among the offender population. Common misconceptions held by legal professionals include the belief that having an IQ near the average range precludes an individual from having FASD and from having significant adaptive behavior deficits that make them functionally equivalent to someone with an intellectual disability, that the absence of distinctive facial features means the individual does not have FASD or their functional deficits are not severe, and that superficial verbal fluency and seemingly adequate language skills exclude the possibility of FASD (Brown et al., 2010). These misconceptions interfere with the ability of criminal justice professionals to identify undiagnosed offenders with potential fetal alcohol spectrum disorders who need additional support throughout the legal process.

Criminal justice personnel with limited training on the behaviors of offenders with FASD may misinterpret manifestations of neurological impairment as purposeful misconduct, and their unawareness of the cognitive implications of FASD leads to the majority of the disadvantages individuals with FASD experience during arrest, interrogation, and trial. When CJS professionals are knowledgeable about fetal alcohol spectrum disorders and educated about the possibility of undiagnosed FASD in the offender population, they can alter their interactions with offenders in order to accommodate for neurological differences. Professionals in the CJS can use direct and concrete language when speaking with individuals who have confirmed or suspected FASD, check for full comprehension of Miranda rights, and alter the methods used during interrogation to minimize the risk of false confession and confabulation. Justice personnel who understand the neurocognitive and behavioral features of FASD and associated vulnerabilities to manipulation and suggestibility can help protect the rights of individuals with FASD within the CJS.

Ineffective Sentencing

Current mainstream sentencing methods—incarceration, probation, and parole— leave offenders with FASD vulnerable to recidivism and to being caught in the criminal justice system, unable to fulfill the rigid conditions of their community release. These sentencing options fail to address the factors that led individuals with FASD to offend in the first place, and standard incarceration and conditional release do not provide rehabilitation for offenders with neurocognitive differences. Nor do punitive sentences deter offenders with FASD from re-offending or other individuals with FASD from committing similar offenses; since individuals with FASD have deficits in executive functioning that affect their ability to generalize, to understand cause and effect, and to connect their actions with subsequent consequences, previous incarceration or the incarceration of someone else does little to deter future repetitions of the same offense or other offenses.

Stringent probation and parole conditions that do not incorporate the neurocognitive differences of individuals with FASD increase the likelihood of revocation and incarceration. Offenders with FASD are vulnerable to victimization throughout incarceration and are often confined in facilities that do not accommodate their neurological needs. While incarcerated, inmates with FASD are at high risk for abuse and exploitation by other prisoners. Uneducated correctional staff may punish inmates with FASD for manifestations of brain damage caused by PAE, sometimes lengthening their sentences. Individuals with FASD may leave the criminal justice system in worse condition than they entered. Upon release, individuals with FASD return to the same environment and situations that led to their initial trouble with the law without new skills for behavioral regulation or additional support systems.

Individuals with FASD will always be affected by their brain-based neurocognitive and

behavioral impairments no matter how long they have spent behind bars (Brown et al., 2012). Rehabilitative sentences that focus on behavior modification and providing external supports in the community could help reduce the vulnerability of individuals with FASD to reoffending. Current punitive sentencing methods are ineffective at preventing recidivism among offenders with FASD; individuals with FASD are left cycling through a criminal justice system that continually disadvantages them.

Potential Solutions

Based on the key issues of underdiagnosis, uninformed CJS personnel, and inflexible sentencing, potential solutions to the vulnerabilities experienced by individuals with FASD in the CJS include increased screening for FASD among young children and the offender population, the education of professionals working in the CJS on fetal alcohol spectrum disorders and their implication in the legal system, and the implementation of alternative sentencing options for offenders with FASD. However, it is important to note that the majority of potential solutions discussed in this section have been promoted by authors in the field but require the generation of a larger evidence base to support their utilization (Olson, 2016).

Justice Trueman from British Columbia writes, “The cognitively challenged are before our courts in unknown numbers. We prosecute them again and again and again. We sentence them again and again and again. We imprison them again and again and again. They commit crimes again and again and again. We wonder why they do not change. The wonder of it all is that we do not change” (Mela, 2016, 125).

The first step towards the equitable treatment of individuals with FASD, and towards potentially preventing initial encounters with the law, is correctly identifying and

accommodating their diagnoses. According to Page, “These disabilities [FASD] can turn into troubling or dangerous behavior when they are not identified and treated” (Page, 2001, 26). The most proactive solution is the implementation of greater early childhood screening and diagnostic facilities so that children with FASD can grow up receiving intervention services and an education in an environment appropriate for their neurocognitive and behavioral needs (Olson et al., 2009). Though diagnosis may not be possible, screening tools should be used among offenders at initial entry to the criminal justice system to allow for more effective case management of offenders identified as likely to have FASD (Burd et al., 2010). The education and training of criminal justice personnel enables the needs of offenders with FASD to be recognized and better accommodated in the legal system (Wyper & Pei, 2016). Finally, alternative sentencing should be implemented to prevent victimization in correctional facilities, to reduce recidivism, and to promote rehabilitation (ABA, 2012; Pei et al., 2016).

Early Childhood Screening, Diagnosis, and Intervention

The best solution to the societal disadvantages repeatedly encountered by individuals with FASD is early diagnosis and intervention, the vital first step towards improving life outcomes for individuals affected by PAE (May et al., 2009; Olson et al., 2009; Page, 2011). This proactive approach would identify the needs of individuals with FASD early in life so that those needs can be recognized and accommodated at home, at school, and in the legal system (Olson et al., 2009). Early diagnosis of FASD allows the education of caregivers on the nature of their child’s brain damage, the mobilization of support services, and the implementation of appropriate educational and parenting practices that enhance the self-image of children with FASD (Page, 2001). With an early diagnosis, parents and teachers are also able to anticipate and

potentially prevent the development of secondary disabilities, such as substance use disorders and trouble with school, and families are able to start planning for the supported living environment that their child with FASD will likely need as an adult (Burd et al., 2010).

Streissguth and associates found that the early diagnosis of fetal alcohol spectrum disorders is a universal protective factor against all secondary disabilities, including criminal justice involvement, and the early recognition of FASD has the potential to reduce the over-representation of individuals with FASD in the CJS (Burd et al., 2010; Fast & Conry, 2004; Streissguth et al., 1996; Wyper & Pei, 2016).

However, for reasons previously discussed in chapter one, only 11% of individuals involved in Streissguth's study were diagnosed by age six (Streissguth et al., 1996). Improved screening methods and a massive increase in available diagnostic services are needed in order to implement accessible early diagnosis and intervention for children with FASD (Burd et al., 2010). Target populations of young children who should be screened for fetal alcohol spectrum disorders include children of women in substance abuse treatment or who are incarcerated, children in foster care, and siblings of children already diagnosed with FASD (Burd et al., 2010). Screening tools are intended to identify indicators of FASD so that children who have these indicators can be referred for comprehensive diagnostic assessment and individualized treatment plans (Bisgard et al., 2010; Burd et al., 2010). The development of statewide diagnostic clinics would aid in the assessment and diagnosis of children who are likely to have FASD; these clinics could also provide parents with information on interventions and services available for children with FASD (Streissguth et al., 1996).

In-school evaluations for FASD during the first grade would help identify children with FASD at an early age and would provide access to needed evaluative and educational services

(May et al., 2009). Though diagnosis at the earliest age possible is preferable, the detection of FASD is particularly viable among six and seven-year-olds because the physical, behavioral, and neurocognitive features of the disorders are readily evident and testable by this age (May et al., 2009). May and associates reported on several in-school studies conducted among first graders in various US regions that successfully identified children likely to have fetal alcohol spectrum disorders through physical examinations and neurobehavioral testing (May et al., 2009). As part of the studies, both mothers of children suspected of having FASD and mothers of control children were interviewed about factors influencing maternal risk: demographics, nutrition, physical health, alcohol and drug use, and genetics (May et al., 2009). Though women from more affluent socio-economic backgrounds tend to under-report their prenatal drinking habits, the retrospective collection of this information when the children are age six or seven has shown to be more accurate than information gathered in prenatal clinics where stigma and fear of discovery suppress accurate reporting of alcohol use (May et al., 2009).

Like children with other developmental disabilities, early intervention for children diagnosed with FASD can improve their life outcomes by taking advantage of the neuronal plasticity particularly present early in life (Olson et al., 2009). Early intervention can address a child with FASD's development of language, social skills, motor skills, appropriate behavior, and even executive functioning skills (Brown et al., 2010; Hand et al., 2016; Olson et al., 2009). Early intervention that targets a child's language development can help children with FASD improve the language and social communication skills that they will need to navigate educational, health, or legal contexts (Hand et al., 2016). Social skills interventions that teach children how to interact with peers, how to join a group of children already playing, and how to avoid and appropriately resolve conflict have been shown to help children with FASD improve

their social skills and decrease problem behaviors (Brown et al., 2012; Olson, 2016).

Intervention programs can also involve strategies to help improve memory, cause-and-effect reasoning, planning, and problem solving and can target important safety skills (Brown et al., 2012). However, empirical research regarding the effectiveness of these proposed interventions is needed; limited data exists on FASD behavioral interventions, and a body of evidence-based practices has yet to be established for FASD-informed care (Olson, 2016).

If an individual receives a diagnosis of a fetal alcohol spectrum disorder, a number of scholars recommend that the individual carry a card on their person detailing their disability in case they are confronted by law enforcement (Brown et al., 2015; Roach & Bailey, 2009; Thiel et al., 2011, 146). This card will inform officers of the individual's needs and could potentially prevent the unintentional waiving of Miranda rights. When stopped by a police officer, the person with FASD can present the card, which instructs law enforcement to delay questioning until a parent or attorney is present in order to prevent the individual from making potentially incriminating statements or consenting to searches (Roach & Bailey, 2009; Thiel et al., 2011). Thiel and associates (2011) propose that one side of the card contain the individual's photo, name, address, and emergency contact information, while the other side reads:

I have the birth defect Fetal Alcohol Spectrum Disorder which causes brain damage. If I need assistance, or if you need my cooperation, you should contact the person listed on the back of this card. Because of this birth defect, I do not understand abstract concepts like legal rights. I could be persuaded to admit acts that I did not actually commit. I am unable to knowingly waive any of my constitutional rights, including my Miranda rights. Because of my disability, I do not wish to talk with law enforcement officials except in the presence of and after consulting an attorney. I do not consent to any search of my

person or property. (p. 146)

If the card is presented and law enforcement officers continue with questioning, the court could find a confession given under these circumstances inadmissible (Thiel et al., 2011). Thus, the diagnosis of a fetal alcohol spectrum disorder prior to criminal justice involvement could stay some of the injustices facing individuals with FASD in the legal system.

Screening Offender Populations

Early childhood screening, diagnosis, and intervention does little to assist the 80% of individuals already living with an undiagnosed fetal alcohol spectrum disorder and struggling with associated secondary disabilities (May et al., 2018). Improved methods for screening, diagnosing, and treating offenders with FASD are desperately needed (Wyper & Pei, 2016). Currently, the vast majority of individuals affected by PAE in the CJS enter correctional facilities without a diagnosis, and guidelines for screening and detecting FASD are often absent in confinement settings, leading to the use of ineffective interventions when addressing the problematic behaviors of undiagnosed offenders with FASD (Brown et al., 2012).

Though few justice facilities currently screen offenders for FASD, leading researchers in the field recommend screening for undiagnosed individuals with FASD as early as possible in their contact with the CJS so that their behaviors can be understood in the context of their neurological impairments throughout the legal process (Brown et al., 2015; Burd et al., 2010; Mela, 2016; Passmore et al., 2016). Awareness of offenders' neurocognitive challenges allows for better case management and appropriate intervention, which can positively impact the ability of offenders with FASD to understand the justice rules and regulations, along with the conditions of their probation or parole, and may reduce recidivism (Bisgard et al., 2010; Burd et al., 2010).

Additionally, the confirmation of a FASD diagnosis would allow judges to make informed sentencing decisions for offenders with FASD; judges aware of the challenges associated with FASD can design a sentencing alternative that will reduce the risk of recidivism among this population and promote treatment rather than incarceration (ABA, 2012; Brown et al., 2015).

Ideally every individual entering the CJS should be systematically screened for FASD upon initial intake (Brown et al., 2012; Burd et al., 2010). For a number of offenders with FASD, their first encounter with the criminal justice system is as juveniles. The American Bar Association recommends screening youth for FASD at all entry points into the juvenile court system (ABA, 2012). Screening for FASD and referral to diagnostic services following initial contact with the juvenile justice system helps young offenders affected by PAE receive appropriate case management recommendations early on and potentially prevents future contact with the adult justice system (Bisgard et al., 2010; Popova et al., 2011).

Screening Methods. The purpose of screening is to identify individuals likely to have fetal alcohol spectrum disorders, not to provide an official and comprehensive diagnosis (Burd et al., 2010). A barrier to implementing screening services is the limited availability of published and empirically validated screening tools other than Streissguth and associates' Fetal Alcohol Behavior Scale (Brown et al., 2012; Burd et al., 2010). The Fetal Alcohol Behavior Scale assesses empirically based behaviors that differentiate individuals with FASD from nonclinical populations in the areas of communication, personal manner, emotions, motor skills, social skills, academic functioning, and physiological functioning; the majority of the behaviors assessed reflect deficits in executive functioning and social-emotional development (Brown et al., 2012; Streissguth et al., 1998). While the Fetal Alcohol Behavior Scale only takes about 15

minutes to complete, it requires the participation of a respondent who has knowledge about the functioning of the individual being screened; knowledgeable respondents potentially include caregivers, relatives, teachers, probation officers, or treatment professionals, and these respondents may be difficult to identify and locate (Brown et al., 2012).

Since few forensic screening tools for FASD exist, the use of an informal checklist (Figure 2) that contains empirically validated factors known to be associated with FASD can help identify individuals in need of diagnosis and treatment (Brown et al., 2010).

FASD EXPERTS SCREENING QUESTIONNAIRE		✓
Offense Conduct		
Impulsive and illogical actions with high risk of detection		<input type="checkbox"/>
“Simple” offense plan (focus is only on the objective)		<input type="checkbox"/>
Poor exit strategy		<input type="checkbox"/>
Aggressive over-reaction to unforeseen events (“fight or flight”)		<input type="checkbox"/>
More sophisticated/experienced co-defendants		<input type="checkbox"/>
Arrest Conduct		
Immediately or easily waives rights		<input type="checkbox"/>
Over-confesses (suggestible)		<input type="checkbox"/>
Braggs about prowess or takes full responsibility if co-defendants		<input type="checkbox"/>
Emotionally detached from crime (shows little remorse or guilt)		<input type="checkbox"/>
Behavioral regression (breaks down in tears, infantile behavior)		<input type="checkbox"/>
Interview with Client		
Short stature (not always)		<input type="checkbox"/>
Unstable lifestyle		<input type="checkbox"/>
Socially inept, immature, and naïve		<input type="checkbox"/>
Eager to please or stubbornly resists the obvious		<input type="checkbox"/>
Can’t provide coherent, detailed narrative		<input type="checkbox"/>
Can’t concentrate		<input type="checkbox"/>
Doesn’t add much to discussion		<input type="checkbox"/>
Doesn’t seem to remember what you tell him/her from appointment to appointment		<input type="checkbox"/>
Prior Legal History		
Easily led by more sophisticated peers		<input type="checkbox"/>
Multiple low-grade offenses in teen years, often with co-defendants		<input type="checkbox"/>
Lots of stealing		<input type="checkbox"/>
Illogical offenses (e.g., stealing something with little value)		<input type="checkbox"/>
Oblivious to risk		<input type="checkbox"/>
Impulsive, opportunistic crimes		<input type="checkbox"/>
Probation violations		<input type="checkbox"/>

Figure 2: Excerpt from FASD Experts Screening Questionnaire
 Source: Brown, N. N., Wartnik, A. P., Connor, P. D., & Adler, R. S. (2010).

Screening tools used for new admissions to the criminal justice system should be fast, uncomplicated, and efficient (Brown et al., 2012; Burd et al., 2004). Screening strategies should evaluate available data on prenatal exposure to alcohol, cognitive testing, educational assessments, behavioral data, and sensory impairments to identify offenders in need of further diagnostic assessment (Brown et al., 2015; Burd et al., 2004). Though not validated, a number of agencies have developed brief screening tools for FASD that could be implemented within the criminal justice context (Brown et al., 2012; Burd et al., 2010). For example, the FASD Youth Justice Project in Manitoba screens adolescents with confirmed prenatal alcohol exposure on measures such as repeated failure to comply, poor school experiences, unaffected by punishment, taking a “follower” rather than a “leader” role in crime, and engaging in risky crimes with little potential gain (Brown et al., 2012, p. 177), and in British Columbia, the Asante Center for Fetal Alcohol Syndrome Probation Officer Screening and Referral Form uses components such as social, personal, and mental health factors to help probation officers screen youth in their caseload with or without confirmed PAE for FASD (Brown et al., 2010; Burd et al., 2010).

Screening is intended to narrow down individuals likely to have a fetal alcohol spectrum disorder so that these individuals can receive a comprehensive diagnostic assessment—screening tools are not detailed enough to substitute for diagnostic assessment and treatment planning (Burd et al., 2010). The United States and Canada advocate for a multi-disciplinary approach to the diagnosis of FASD that includes a team of physicians, geneticists, psychiatrists, psychologists, social workers, and other health professionals since diagnosis involves considering all possible developmental disabilities, syndromes, and mental health disorders and requires several areas of evaluation that cannot be provided by one discipline alone (Burd et al., 2010; Chudley et al., 2007; Passmore et al., 2016). While the “gold standard” for FASD diagnosis,

multidisciplinary assessment is expensive and not practical for the large number of individuals in need of assessment; FASD diagnosis by primary care doctors and mental health providers is a much more feasible and cost effective option (Brown et al., 2012, p. 778). The diagnostic assessment process should begin with recognition of the need for a diagnosis and should end with the implementation of recommendations and a treatment plan (Chudley et al., 2007). Diagnostic evaluations provide valuable information for effectively serving individuals with FASD in the criminal justice context (Burd et al., 2010).

Since FASD is an invisible disability, assessment and diagnostic services allow professionals in the criminal justice system to identify and provide individualized accommodations to offenders with FASD (Pei et al., 2016). Criminal justice personnel interviewed by Pei expressed that the lack of a formal diagnosis is a significant barrier to providing accommodations to offenders who would benefit from them (Pei et al., 2016). A diagnosis of FASD informs criminal justice professionals about the strengths and limitation of diagnosed offenders, enabling the personnel to modify their behavior when engaging with this group in order to minimize the disadvantages experienced by offenders with FASD (Pei et al., 2016)

Education of Criminal Justice Professionals

The current criminal justice system is a poor fit for offenders with FASD (Wyper & Pei, 2016). While the justice system has the potential to serve a rehabilitative purpose, criminal justice professionals lack the skills and awareness necessary to effectively intervene and break the cycle of recidivism for offenders with FASD (Brown et al., 2015; Passmore et al., 2016; Popova et al., 2011; Wyper & Pei, 2016). Without appropriate training and education related to FASD, correctional staff may misinterpret brain-based disabilities as willful misconduct, amplifying the likelihood of negative outcomes for individuals with FASD in the legal system (Burd et al., 2010; Wyper & Pei, 2016). The incorporation of FASD specific training and awareness programs for criminal justice personnel would improve understanding of the disorders in the legal context and lead to better management of offenders with FASD (Brown et al., 2015; Burd et al., 2010; Mela, 2016). In addition to providing basic management strategies, training programs should teach correctional professionals to recognize the basic characteristics and symptoms associated with FAS, PFAS, and ARND so that they are able to consider the possibility of FASD when interacting with offenders who struggle with comprehension, learning, memory, social skills, and behavioral regulation (Brown et al., 2015; Burd et al., 2004).

The Edmonton Police Service developed the following chart (Table 1) to assist police officers working with offenders who have FASD (ABA, 2012). The American Bar Association promotes this chart as a useful tool for all justice system professionals (ABA, 2012, p. 355). The chart helps criminal justice professionals contextualize the problematic behaviors of offenders with FASD as manifestations of neurological impairments.

Table 1: Considerations for Justice System Professionals

Source: The American Bar Association (2012).

What we SEE	What we THINK	What's REALLY GOING ON
NONCOMPLIANCE (e.g. Not obeying rules, trying to make me mad)	<ul style="list-style-type: none"> • Resistant and controlling • Attention seeking • Stubborn • Manipulative 	<ul style="list-style-type: none"> • Difficulty translating verbal directions into actions • Doesn't understand • Slow cognitive pace • Unable to remember, over-stimulated • Anxiety and fear
REPEATEDLY MAKING THE SAME MISTAKES (e.g. repeat offender)	<ul style="list-style-type: none"> • Doing it on purpose • Manipulative • Impulsive 	<ul style="list-style-type: none"> • Cannot link cause to effect • Cannot see similarities • Difficulty generalizing from one event to another • Has difficulty remembering
OFTEN LATE	<ul style="list-style-type: none"> • Lazy, slow • Poor parenting • Doing it on purpose 	<ul style="list-style-type: none"> • Cannot understand the abstract concept of time • Tries hard, exhausted or can't start • Needs assistance getting organized and remembering.
NOT SITTING STILL	<ul style="list-style-type: none"> • Seeking attention • Bothering others/resisting • Doing it on purpose 	<ul style="list-style-type: none"> • Neurologically based need to move while learning • Sensory overload • Doesn't understand, has difficulty in paying attention
POOR SOCIAL JUDGMENT	<ul style="list-style-type: none"> • Takes the blame • Poor parenting • Abused child • Doing it on purpose • Uncaring • Untruthful 	<ul style="list-style-type: none"> • Easily lead by others • Not able to interpret social cues or know what to do in social settings • Impulsive - unable to perceive consequences of their actions • Fills in the blanks • An adult with FASD may be articulate but have the functional capacities and judgment of an average 8 year old
OVERLY PHYSICAL	<ul style="list-style-type: none"> • Uncomfortable body language • Doing it to bother other people • Inappropriate sexual behaviour • Deviancy 	<ul style="list-style-type: none"> • Does not understand social cues regarding boundaries • Hyper- or hypo-sensitive to touch (feels things too much or not enough)

Education about fetal alcohol spectrum disorders can improve the interactions between criminal justice workers and offenders with FASD throughout the legal process. Once aware that the individuals with whom they are working are highly suggestible, easily manipulated, impulsive, forgetful, and distractible, criminal justice professional can modify the way they engage with offenders who have FASD through simple adjustments such as paying more attention, giving more feedback, using less complex language, and avoiding leading questions (Brown et al., 2015; Pei et al., 2016). Alternative communication strategies should be employed with individuals who have FASD throughout the criminal justice process. During questioning, “yes” or “no” questions should be avoided as a “yes” or “no” response masks comprehension difficulties (Brown et al., 2015). When criminal justice personnel, including lawyers and judges, present important information or instructions to offenders with FASD, they should use simple vocabulary consistent with the individual’s developmental ability, and they should ask the individual with FASD to repeat what they heard in their own words to ensure understanding (Brown et al., 2015; McLachlan et al., 2014). During interrogative situations, it is particularly important for the interrogator to be aware that individuals with FASD are likely to reply with the answer that they believe the interrogator wants to hear in an effort to please and that they have a tendency to confabulate and unknowingly provide misinformation (Brown et al., 2015). Also individuals with FASD who have sensory sensitivities may be jarred by a light touch on the shoulder and react impulsively, so criminal justice staff should avoid unnecessary physical contact with offenders who have FASD (Brown et al., 2015).

Lawyers should also be advised to keep their questions short and simple and to give defendants with FASD time to process before responding, which may require more patience than when working with neurotypical clients (Hand et al., 2016). Before standing trial, lawyers should

invest extra time and effort to ensure their clients with FASD understand the important case-specific concepts and court procedures (McLachlan et al., 2014). Judges and those involved in criminal courts, including forensic mental health teams, should receive education on fetal alcohol spectrum disorders so that FASD is considered as a possibility in all relevant cases (Mela, 2016). FASD training initiatives for probation officers could immensely benefit individuals with FASD on probation or parole (ABA, 2012; Thiel et al., 2011). Probation officers who understand the behavioral implications of FASD can assist individuals with FASD in adhering to their probation conditions through modifications such as calling the individuals to remind them of probation and court appointments and helping them to meet curfew by setting an alarm on their phone or watch (Bisgard et al., 2010; Thiel et al., 2011). With FASD education, probation officers should learn to frequently repeat the conditions of probation in simple and concrete language and avoid overreacting to minor probation violations by probationers with FASD (ABA, 2012; Wartnik & Carlson, 2011). The education of criminal justice professionals on fetal alcohol spectrum disorders can prevent individuals with FASD from being misunderstood and taken advantage of by those working in a system intended to promote justice.

Alternative Sentencing

The traditional punishments of the criminal justice system fail to deter offenders with FASD who do not understand the link between their behavior and negative consequences and who have difficulty learning from past experiences (Fast & Conry, 2009; Pei et al., 2016; Wyper & Pei, 2016); the principles of sentencing operate on assumptions of cognitive functioning and reasoning skills that may not apply to individuals with FASD (Fast & Conry, 2004; Pei et al., 2016). In order to accommodate the neurocognitive differences of offenders with FASD and

mitigate the risk of future offenses, a shift from punitive to therapeutic sentencing is needed (Pei et al., 2016; Wyper & Pei, 2016). Individuals with FASD experience greater harm from traditional confinement than offenders without disabilities, and the victimization of individuals with FASD in jail or prison does not reduce recidivism and returns offenders with FASD to the community in worse condition than they left (ABA, 2012; Fast & Conry, 2004). Alternative sentencing, particularly sentences that aim to change the offender's living environment or social situation, is the most effective sentencing option for individuals with FASD (Fast & Conry, 2004). The recidivism of offenders with FASD is best reduced through therapy and community-based programs that provide mentors for external support (ABA, 2012; Chudley et al., 2007).

Wartnik and Carlson (2011) developed ten principles for sentencing offenders with FASD, which have since been endorsed by the American Bar Association (ABA, 2012). The first principle proposes that a diagnosis of FASD be considered as a mitigating factor that reduces culpability and enables less severe sentencing (ABA, 2012; Wartnik & Carlson, 2011). The principles expand on the specific needs of individuals with FASD during community supervision and recommend taking the neurocognitive deficits of FASD into account when sanctioning minor breaches of probation or parole conditions (Wartnik & Carlson, 2011). The FASD sentencing principles also advocate for minimum incarceration with preferably no time spent in correctional facilities and for maximum community supports that include the creation of structure in the offender's life (Wartnik & Carlson, 2011, p. 89). The best approach to achieving compliance from offenders with FASD is through the implementation of appropriate support systems to accommodate their neurocognitive and behavioral needs during supervision, counseling, and treatment rather than through sanctions (ABA, 2012).

However, few courts subscribe to rehabilitative sentencing practices and most lack

alternatives to incarceration for offenders with FASD (Mela, 2016). In correctional facilities, inmates with FASD require a high level of supervision to reduce the risk of further victimization and to increase their likelihood of successfully completing their prison sentence; when the needs of individuals with FASD are neglected in prison or jail, these individuals are more likely to develop secondary disabilities, including self-harm and suicidal ideation (Brown et al., 2015). The ideal correctional environment for these offenders is a separate unit for inmates with FASD and similar disorders such as traumatic brain injuries (Page, 2001). This separate environment would serve the dual purpose of protecting offenders with disabilities from victimization and exploitation by other inmates and of teaching rehabilitative and life skills that accommodate and target the offenders' specific needs, such as emotional self-regulation (Brown et al., 2015; Page, 2001). Brown and associates found that incarcerated youth with FASD responded best to highly structured, consistent, and individualized interventions that targeted adaptive functioning and social skills through behavior therapy (Brown et al., 2012; Wyper & Pei, 2016). Brown's study also advocated removing young offenders with FASD from chaotic home environments and building long-term support and supervision for the youth in their communities (Brown et al., 2012; Wyper & Pei, 2016).

Offenders with FASD are most effectively served through community-based rehabilitation that focuses on building personal strengths, adding structure, and increasing support systems in the individual's life (Pei et al., 2016; Wartnik & Carlson, 2011; Wyper & Pei, 2016). In order to reduce recidivism, collaboration should occur among community support providers (Brown et al., 2015; Chudley et al., 2007; Wyper & Pei, 2016). Services should include strength-based individual interventions that teach the personal skills necessary for success in the community, such as how to engage in healthy relationships, manage emotional

arousal, and maintain employment, as well as external interventions that modify the individual's environment and create external support systems (Pei et al., 2016; Wyper & Pei, 2016). External support systems, which include family members, probation services, and mentors, provide structure and supervision for individuals with FASD in the community and enforce a clear and consistent set of expectations across environments (Wartnick & Carlson, 2011). Alternative community-based sentencing options prevent the negative outcomes associated with incarceration while helping individuals with FASD establish a more productive life by attending school or holding down a job; however, offenders with FASD require constant intense supervision by a responsible adult for alternative sentences to be successful (Fast & Conry, 2004; Fast & Conry, 2009).

Mentorship. Mentorship effectively fulfills this component of alternative sentencing; mentors offer continual guidance, monitoring, and assistance for individuals with FASD throughout their sentence and potentially afterwards (Mela, 2016; Pei et al., 2016; Wartnik & Carlson, 2011; Wyper & Pei, 2016). Since individuals with FASD have significant deficits in executive functioning, mentors essentially function as “external brains” that provide structure and order for offenders with FASD (Brown et al., 2012; Chasnoff, 2010, p. 67; Chudley et al., 2007, p. 269; Wyper & Pei, 2016, p. 114). Mentors compensate for limited adaptive skills by supporting individuals with FASD in navigating the responsibilities of daily life, while also providing a consistent source of healthy social and emotional support that may not otherwise exist for the individual with FASD (Chudley et al., 2007; Mela, 2016; Wyper & Pei, 2016).

Mentors offer advice and encouragement and act as advocates who help individuals with FASD manage money, acquire living accommodations, remember appointments and vocational

responsibilities, and contact community-based services, such as vocational rehabilitation services and mental health clinics (Brown et al., 2012; Chudley et al., 2007; Pei et al., 2016). According to Chudley and associates, “FASD adults who have had advocates have experienced increase in personal income, received direct services by being found eligible for existing programs in the system that they did not know how to access prior to the help, and they have become empowered to make changes in their lives” (Chudley et al., 2007, p. 271). The benefits of having a mentor extend beyond fulfilling CJS sentences, and offenders with FASD would benefit from lifelong mentorship services that provide support, guidance, and supervision throughout adulthood (Brown et al., 2012; Chasnoff, 2010; Wyper & Pei, 2016).

Areas for Further Research

This review and discussion of existing literature uncovered a number of areas related to FASD and CJS involvement that require further empirical research. First, research specifically evaluating the interactions of individuals with FASD and the United States criminal justice system is needed. Researchers in Canada have generated a significant portion of the current literature in this field. While similarities exist between these two legal systems and Canadian recommendations for practice still can apply to the CJS in the US, the Canadian justice system and Canadian population differ from that of the United States. Currently little empirical evidence is available on the prevalence of FASD in corrections systems (Popova et al., 2011); studies that use screening and diagnostic teams to assess the number of offenders with FASD in the CJS are needed and should be undertaken in US juvenile and adult correctional facilities.

A major area of the legal process not discussed in the current literature related to FASD and the CJS is plea-bargaining. The vast majority of criminal cases in the United States are

settled through plea deals rather than through trials—in 2017, 97.2% of federal criminal cases were settled through guilty pleas with only 2.8% of federal criminal cases going to trial (United States Sentencing Commission, 2017 Sourcebook of Federal Sentencing Statistics, 2017).

However, the literature reviewed for this synthesis primarily focused on criminal cases going to trial without discussing how having FASD could influence the process of plea negotiation for the defendant. Based on the literature related to other aspects of the legal process, it seems highly likely that the neurocognitive deficits associated with FASD would also impact the ability of affected defendants to appreciate and understand plea deals. As individuals with FASD have a desire to please people in positions of authority, including the prosecutor, trouble appreciating cause and effect and the consequences of their decisions, difficulty with receptive language skills, and a tendency to agree when they do not understand what was asked (Fast & Conry 2009), this vulnerable group of offenders seems susceptible to taking plea deals regardless of guilt.

Though empirical research is required to determine how individuals with FASD respond to the plea bargaining aspect of the legal process, literature on related areas of the CJS suggests that individuals with FASD may not understand that by accepting a plea deal, they are admitting guilt and will not be given an opportunity to argue their innocence. Additionally, it seems possible that innocent individuals with FASD may also unquestioningly believe a prosecutor who says that they will go to prison for a long time or face a death sentence if they do not accept the plea. The informality of many plea-bargaining processes may complicate the gathering of empirical evidence in this area, but as plea bargains are a key feature of the criminal justice system, further research should be done to ensure that individuals with FASD receive equitable treatment when offered a plea deal.

As a number of demographic features contribute to the likelihood of criminal justice involvement in the United States, studies that assess representation of individuals with FASD in the CJS that control for factors such as socioeconomic status, race, gender, and co-morbid disabilities such as ADHD, TBI, mental health disorders, and substance use disorders would be valuable. Additionally, Streissguth and associates' longitudinal study that assessed primary and secondary disabilities for hundreds of individuals diagnosed with fetal alcohol spectrum disorder occurred during the 1990s (Streissguth et al., 1996). Over twenty years have passed since this study, and this study primarily involved white participants with FASD (Streissguth et al., 1996). Another longitudinal study looking at the prevalence of secondary disabilities among a more racially diverse group of individuals with FASD would provide current information on Trouble with the Law statistics. Finally, additional studies evaluating the success of the proposed FASD screenings and interventions with the offender population would allow the implementation of evidence-based best practices in the criminal justice system (Olson, 2016).

Conclusion

Fetal alcohol spectrum disorders are invisible disabilities that affect upwards of 2-5% of school children in the United States (Wyper & Pei, 2016). Prenatal exposure to the teratogen alcohol adversely influences neurological development, resulting in organic brain damage that causes neurocognitive and behavioral deficits in executive functioning, adaptive functioning, language, attention, memory, and social skills. These deficits increase the susceptibility of individuals with FASD to criminal justice involvement, and the majority of individuals with FASD encounter trouble with the law during their lifetime (Streissguth et al., 2004). Once in the justice system, offenders with FASD are vulnerable to exploitation and misunderstanding during every stage of the legal process from arrest through interrogation, testimony, trial, probation, and incarceration. Three key factors contribute to these vulnerabilities: underdiagnosis of FAS, PFAS, and ARND and a lack of appropriate intervention services, under-education of criminal justice personnel on effectively managing and engaging with offenders who have FASD, and ineffective sentencing options that focus on punishment rather than rehabilitation and recidivism prevention. These key issues are potentially solved through an increase in screening and diagnostic services for young children and offenders, improved FASD training programs for CJS professionals, and alternative sentencing options based in the community rather than behind bars. The intersection of FASD and the CJS requires further empirical research that will hopefully lead to reform in how the legal system serves offenders with FASD.

Fetal alcohol spectrum disorders are highly prevalent in the United States (May et al., 2018), but societal stigma surrounding maternal alcohol use and misconceptions about the full spectrum of fetal alcohol disorders have limited public recognition, research funding, and support services for these disorders. Though uncomfortable to acknowledge, harmful fetal

alcohol exposure is common in the United States today, despite the scarcity of resources for those born with FASD (May et al., 2018). The neurological, cognitive, and behavioral features of fetal alcohol spectrum disorders affect every facet of daily life for both individuals with the disorders and those who care for them (Chudley et al., 2007). Individuals growing up with fetal alcohol spectrum disorders experience adversity and misunderstanding throughout their lives—the criminal justice system is only one of many societal systems not designed to accommodate their needs. American society needs to recognize the legitimacy and widespread prevalence of fetal alcohol spectrum disorders and modify policies in public health, criminal justice, and education accordingly so that individuals born with FASD are afforded an equitable quality of life and the chance for a positive future in their communities.

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About the Author

Anna Biondi was born and raised in Houston, Texas. She enrolled in Plan II Honors at the University of Texas at Austin in August of 2013, after taking a gap year to volunteer at a residential school for children with developmental disabilities in Ringwood, England. During her time in Austin, Anna has engaged with the disability community through organizations such as Best Buddies, Camp C.A.M.P., Texas Chargers, Austin State Supported Living Center, and Texas School for the Blind and Visually Impaired. She will graduate in May of 2018 with a B.A. in Plan II and plans to continue her employment at Texas School for the Blind and Visually Impaired after graduation. Her younger brother has alcohol-related neurodevelopmental disorder, and the many societal barriers in his life inspired this thesis. The interview Living with an Invisible Disability by Special Books by Special Kids features Anna, her brother, and their family and discusses the daily realities of life with FASD.