

5-2022

Personality and Behavioral Characteristics: A Study of Court Populations

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Personality and Behavioral Characteristics: A Study of Court Populations

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Presented to the Faculty of the
Graduate School of Clinical Psychology

George Fox University

in partial fulfillment

of the requirements for the degree of

Doctor of Psychology

in Clinical Psychology

Newberg, Oregon

Approval Page

Personality and Behavioral Characteristics: A Study of Court Population

by

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has been approved

at the

Graduate School of Clinical Psychology

George Fox University

as a Dissertation for the PsyD degree

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May 5, 2022

Abstract

Despite the growing body of research for Fetal Alcohol Spectrum Disorder (FASD) within adults, there remains a lack of research addressing the prevalence of FASD in the legal system. Over the last several decades it has become apparent that alcohol consumption during pregnancy can have devastating long term impacts on the developing fetus including facial abnormalities, cognitive deficits, adverse life outcomes, and behavioral challenges (Brintnell et al., 2019; O'Neil, 2011; Sarman, 2018; Streissguth et al., 2004). Within the legal system, FASD is about 30 times higher than the general population (Lange et al., 2017). Initially, the prevalence of FASD was difficult to accurately track due to the lack of information regarding the mother's alcohol consumption during pregnancy. One significant barrier in diagnosing FASD continues to be a systematic way to track and screen for FASD. This study examined the Behavioral Traits Survey: Self Report (DeVries et al., 2001) as a possible screener and the behavioral characteristics using the Personality Assessment Inventory (PAI; Morey, 1991). Participants were 25 justice-involved adults, recruited online and referred through probation program. Each participant completed an online survey that included the Behavioral Traits Survey: Self Report and the PAI. Results verified there was a relationship between the Behavioral Traits Survey: Self Report and the antisocial, aggression, alcohol, and drug scales of the PAI. Higher scores on the scales of the PAI were found in adults with FAS behavioral profiles, highlighting need for assessments to screen for FASD to provide interventions to address clinical needs and reduce recidivism risk. Concerns about the validity of the Behavioral Traits Survey: Self Report and PAI are raised and the need for further reliability and validity studies on these measures are discussed.

Keywords: fetal alcohol spectrum disorder, prenatal exposure, behavioral traits survey:
self-report, personality assessment inventory, corrections, fetal alcohol syndrome

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Chapter 1

Fetal Alcohol Spectrum Disorder (FASD) is the leading, most preventable disorder that causes birth defects and deficits in intellectual, behavioral, and neurodevelopment in the brain (Bertrand et al., 2004). It occurs when the teratogen, alcohol, is exposed to the fetus in the mother's womb and causes brain damage, growth problems, central nervous system (CNS) defects, and facial abnormalities. FASD is an overarching term used to describe the range of affects that alcohol has on the fetus. FASD encompasses the disorders; fetal alcohol syndrome (FAS), alcohol-related neurodevelopmental disorder neurobehavioral disorder associated with prenatal alcohol exposure, and alcohol-related birth defects (O'Neil, 2011; O'Neil, 2014; Williams et al., 2015).

The first body of research regarding FASD, particularly FAS, was published in 1968 and focused on the negative impacts of prenatal alcohol exposure (PAE) on the unborn child. The documented effects of prenatal alcohol exposure can be seen in the gross anatomy of the brain and can include microcephaly (smaller head circumference than expected for age and sex), delays in cognitive development, growth deficiency (weight and height), face, and central nervous system (CNS) abnormalities (O'Neil, 2014). FAS was officially recognized in the research community in 1973 after documentation and publication in the *Lancet*. By 1981, the US Surgeon General informed the public that prenatal exposure to alcohol caused birth defects. In 1989, alcohol products were required to have labels that warned against consuming alcohol if pregnant due to the harmful effects to the fetus. Doctors were advised to encourage women to abstain from drinking alcohol during pregnancy (O'Neil, 2011).

It is unknown to what degree or amount of alcohol consumption causes birth defects to the fetus due the inability to quantify the exact amount that would interfere with normal

development. PAE affects the fetus in early stages of development. Light to moderate alcohol consumption has been shown to have adverse effects on fetal development (Sarman, 2018). Heavy alcohol consumption or binge drinking during pregnancy significantly increases the risk of abnormal fetal development (Alvik et al., 2013; Lange et al, 2017; Popova et al., 2017). Research recommendations regarding specific quantity of alcohol deemed unsafe remain inconclusive due to a variety of factors that affect prenatal alcohol exposure (PAE). The effects of prenatal exposure are impacted by the quantity of alcohol consumed and the timing of that consumption during prenatal development (Mattson et al., 2019). Although alcohol consumptions during pregnancy is highly cautioned because any amount of alcohol consumption can disrupt fetal development and have significant lifelong and harmful effects on the developing fetus (Atvik et al., 2013; O'Leary & Bower, 2012; Williams et al., 2015).

FASD Diagnoses

The diagnosis of FAS includes facial dysmorphism, growth deficits, central nervous system abnormalities, and confirmed or suspected maternal exposure. The distinct facial abnormalities that are caused from PAE are palpebral fissures, smooth philtrum, and thinning of the upper lip. Additionally, facial dysmorphism may also include low nasal bridge with a short-upturned nose, flat midface, drooping of the eyelids, and underdeveloped jaw and ears (Bertrand et al., 2004; Landgraf et al, 2013). Inkelis et al. (2020) conducted a study looking at neurodevelopment in adolescents and adults using magnetic resonance images (MRI). They used a cross-sectional sample of participants who were diagnosed with FASD to examine how alcohol exposure affects brain development. They found participants with FASD had less education, lower FSIQ scores, and smaller total volume in the corpus callosum, caudate, and cerebellum. In addition, looking at age differences, they found that those in adulthood with FASD, continued to have smaller total

volume regions. This demonstrates that alcohol exposure in prenatal development has lifelong impacts from childhood into adulthood. These developmental abnormalities can result in cognitive, behavioral, social, learning, and adaptive functioning abnormalities (Bertrand et al., 2004; Wattendorf & Muenke, 2005).

Globally, it is estimated that roughly 15 per 10,000 people are born with FAS (Popova, 2017). Working with an interdisciplinary team to screen children and adults for FAS is essential to properly diagnosis. Early diagnosis and intervention are key components in mitigating the elevated risk factors that increase adverse life outcomes in patients with FAS (Streissguth et al., 2004). Streissguth et al. (2004) found the greatest risk of adverse outcome was lack of early diagnosis. The three protective factors to adverse outcomes were a nurturing home, early diagnosis, and a diagnosis of FAS. Patients were more likely to be placed in a “resource room” and receive remedial help (reading and arithmetic) in school if they had an early diagnosis. Negative outcomes such as sexual acting-out, disruption in school, confinement, and trouble with the law increased with age for those who had FAS and lacked a diagnosis.

FASD and FAS have a high risk of co-occurring with other conditions (Lane et al., 2014; Popova et al, 2016). Raldiris et al. (2018) found that children diagnosed with FASD or FASD and ADHD, differed in behavioral and cognitive profiles than children diagnosed with ADHD and other diagnosis. Children with FASD had higher atypicality and obtained lower scores on the Verbal Comprehension, Perceptual Reasoning, and Working Memory than ADHD. Children with FASD and ADHD obtained lower scores on the Verbal Comprehension and an increase in hyperactivity and withdrawal than ADHD. Furthermore, children with FASD and FASD and ADHD had more difficulty with externalizing behaviors, lower IQ's, an increase in aggression than ADHD. There was no difference between children diagnosed with ADHD and other

diagnoses. There was no difference between the groups with internalizing behavior. This study highlighted children with FASD, with or without comorbid of ADHD, have greater difficulty with externalizing behaviors and impairments in intelligence. The presence of externalizing behaviors difficulties (e.g., aggression and conduct problems) is a characteristic to be aware of in the early detection of FASD.

FASD Prevalence

Globally, about 10% of women engage in alcohol consumption during pregnancy and one in 67 women will give birth to a child with FAS. However, not every woman who consumes alcohol during pregnancy will deliver a child with FAS (Popova et al., 2017; Popova et al., 2019). Popova et al. (2017) reported “it is believed that the prevalence ratio of FAS to FASD is about one to nine or 10, indicating that FAS is only the tip of the iceberg” (p. e297). Currently, the prevalence of FASD is a mere estimate. The prevalence of FAS has increased over the last couple of decades as there is an increase in research aimed at estimating the prevalence of FAS. The prevalence can widely differ between countries and the approaches researchers take to estimate the prevalence of FASD. Ongoing research continues to address and provide a more refined estimate of the prevalence of FASD. There is a need for universal data forms and consistent data collection to provide a more accurate representation of the prevalence of FASD between countries.

Previous research used different reporting measures to report the prevalence of FAS including confirmed diagnosis, confirmed alcohol exposure but not confirmed diagnosis, literature reviews, and record review (Popova et al., 2017). There are several factors that limit the ability to obtain a more refined estimate that is important to be considered. First, most women are not aware they are pregnant until they are between 5- or 6-weeks’ gestation (one in

three) and some women do not find out until after 7 weeks (one in five). Women may not realize they are pregnant until they have missed their menstruation or obtain a pregnancy test. In the first 6 weeks of development, brain and facial development occur and prenatal exposure to alcohol can have major structural defects on the embryo (Popova et al., 2017). Second, when a woman finds out she is pregnant she may not disclose or admit she used alcohol. A women's willingness to be forthright regarding her alcohol consumption could be related to cultural factors including abstention from alcohol, social drinking, and societal stigma. Furthermore, the mother of the individual may not be forthright about her alcohol consumption during pregnancy for fear of being judged. When mothers were asked at a prenatal visit about their alcohol consumption, one in nine mothers reported they drank alcohol in the past 30 days and one-third endorsed engaging in binge drinking (Sarman, 2018).

The prevalence of FASD has been found to be higher among at-risk populations including indigenous populations, children in care of another guardian, incarcerated populations, and psychiatric care (Lange et al., 2017; Popova et al., 2019). Lange et al. (2013) reviewed literature on FAS and FASD in childcare settings in eight different countries. They found 6% of children had FAS and 16.9% of children had one of the FASD diagnoses. The lifetime cost of an individual with FAS is estimated to 1 million dollars. However, Popova et al. (2019) noted this does not consider children and adults with profound intellectual disability related to FASD. Individuals with profound intellectual disability have a higher lifetime cost due to the consistent care that is required. An increase in efforts to provide education on prenatal alcohol exposure during unplanned and planned pregnancy is essential to eliminate FAS.

FASD and Children in Corrections

Globally, over 600,000 children are born with FASD and over 100,000 children are born with FAS each year (Popova et al., 2017; Popova et al., 2019). The prevalence of FASD or FAS in the criminal justice system is still relatively unknown. Hughes et al. (2016) reviewed previous literature to estimate the prevalence of FASD in Canada. They discovered there was a disproportionate prevalence of FASD among youth in corrections. This was due to the limited number of studies addressing the prevalence of FASD in the criminal justice system. Thus, they concluded there was “a lack of robust research evidence regarding the prevalence of FASD among young people in criminal justice system” (p. 5).

Compared to youth without FASD, children with FASD were 19 times more likely to be incarcerated (Popova et al., 2011). The prevalence of FASD in subpopulations (children in care, correctional, special education, specialized clinical, and aboriginal populations) was estimated to be 10 to 40 times higher when compared to the general population (Popova et al., 2019). Children with FASD experience an increase involvement with the law, school problems, and an increase in mental illness. Children with confirmed and suspected FASD experience adverse life outcomes including abuse, neglect, and new care providers. Caregivers of children with FASD have consistently observed cognitive, behavioral, and adaptive functioning deficits (McDougall et al., 2020). They have difficulty regulating their emotions and may act impulsively. They display social and language deficits that may make it difficult for them communicate their needs properly resulting in an increase in school disruption. Children with FAS show maladaptive behaviors that increases their risk of involvement with the correction system. Individuals with confirmed and suspected prenatal exposure have shown an increase in environmental stressors, adverse childhood experiences, mental health conditions (e.g., depression, anxiety, bipolar, and

ADHD), and lower socioeconomic status (Coles et al., 2022; Famy et al., 1998). Without the proper safeguards in place, long-term outcomes places children with FASD at greater risk of unemployment, homelessness, suicidal ideation, and substance use problems. Prior research has shown alcohol and drug problems increase as youth transition into adulthood (Paley & Auerbach, 2010). Two probation programs and one inpatient facility in the United States created a process to screen, diagnosis, and provide tailored interventions to juvenile offenders. In Colorado, a probation program found 50% of the youth who completed the full FASD evaluation were diagnosed with FASD. In Minnesota, a probation program found that 96% of the youth who completed the full FASD evaluation received a diagnosis of FASD. In Ohio, three inpatient facilities used similar methods to screen their youth and found that during the initial screening the “total incidence of FASD” was 66%. All three programs highlighted the importance of early screening of FASD in order to provide appropriate interventions for youth with FASD. Similarly, providing stable housing, accurate diagnosis, and appropriate interventions are necessary to reduce recidivism among adjudicated FASD youth (Bisgard et al., 2010).

FASD and Adults in Corrections

The estimated prevalence of FAS among adults in the criminal justice system is limited. Previous research indicated FAS is a strong predictor of involvement with the law. Streissguth et al. (1996) reported that 60% of individuals with FASD had contact with the criminal justice system and 35% endorsed being incarcerated. According to Burd et al., (2004) out of 3.08 million inmates, only one had a correct diagnosis of FAS. They estimated that many more actually had one of the FASDs. As research continues to emerge the estimate of FAS in the criminal justice system among increases. According to Popova et al., (2011) out of six studies in Canada including 37,234 cases, about 3,686 adults with FASD were in in custody in the

correctional system. Also in Canada, Brintnell et al. (2019) evaluated 52 men who were selected to participate in a Mind, Body, and Spirituality Program (MBS). Through FASD assessment, they found that 90% of the men were on the spectrum of FASD and had difficulty with social functioning. In addition, they discovered that 57% of the men experienced significant risk factors such as child abuse. Majority of the participants (67%) had involvement in the juvenile judicial system.

From childhood to adulthood, individuals with FASD are at an increased risk for involvement in the judicial system, victimization, and incarceration (Conry, & Fast, 2010). Adults with FASD continue to have difficulty with learning, social, and adaptive behaviors into adulthood. Adults with FASD face barriers including mental health problems, unemployment, homeless, correctional involvement, and drugs and alcohol problems. One of the many difficulties with supporting people who have FAS, is properly diagnosing the condition. Thousands of children each year are misdiagnosed or go through life undiagnosed. Prenatal exposure to alcohol has lifelong affects. From childhood into adulthood, learning and neurocognitive deficits associated with FASD continue to affect the lives of many adults.

Behavioral Characteristics

As prior research has indicated, individuals with FASD continue to have adverse life outcomes from childhood into adulthood. Research has shown that children and adults with FASD continue to have significant deficits in behavioral, cognitive, and adaptive functioning. Research has continued to highlight the need for screening tools to assist in identifying suspected FASD. The original FAS BeST has been shown to be a reliable and valid screener for caregivers to complete for children suspected of prenatal alcohol exposure (Robins & Andrews, 2009). Currently, the FAS BeST has been studied to examine the reliability and validity as an adult

screener that another person could complete and a self-report. This study hopes to provide more information in terms of the adult adaptation of the FAS BeST, the BTS Self-Report, as a screener and understand the behavioral characteristics of FAS using the PAI among justice involved individuals.

An area of exploration of interest is how aspects of behavior might be affected in FASD. The Personality Assessment Inventory (PAI) is an established measure of personality and psychopathology. There is limited research in understanding how the PAI can assess problematic behaviors in corrections or with individuals diagnosed with FASD. Wang et al. (1997) reviewed clinical records to understand the usefulness of the PAI in corrections. Following the review of 334 PAI profiles on adult male inmates, they found that the PAI was useful in assessing for malingering, suicide risk, and aggression. In another study, Ruiz et al. (2014) examined the PAI and reoffending among individuals incarcerated in jail and enrolled in an addiction treatment program. Antisocial features, aggression features, and drug and alcohol (minimization or denial) response styles were predictive of violent reoffending. They found that these factors revealed the average time of reoffending was 18 months. Ruiz et al. (2014) indicated these factors can contribute to risk–need–responsivity (RNR) model to generate effective interventions with individuals involved in the criminal justice system and completing substance use treatment. Using the PAI in corrections can assist with identifying the risk of reoffending, behavioral concerns, treatment responsivity, and implementation of effective interventions. However, there is a lack of research examining the PAI and individuals with FASD. Additionally, there are no studies exploring the BTS: Self-Report screener and PAI characteristics among FAS profiles in corrections.

Hypotheses

The present study is an adaptation of the research “Defining an adult screener for fetal alcohol spectrum disorder: A study of court populations” by Mushlitz, (2020). This study seeks to further support the BTS Self-Report as a reliable screener and explore the behavioral and personality characteristics of individuals with FAS behavioral profiles. The PAI scales have continuous standard scores with a clinical cutoff at a scores of 65. The BTS: Self-Report is also a continuous score with a clinical cutoff of 67. The “high” group will have a score on the BTS: Self-Report at or above 67 and the “low” group will have a score at or below 66. The following hypotheses are proposed for this adult population:

H1: I hypothesize those who score high on the Behavioral Traits Survey: Self-Report will score higher on the PAI Antisocial scale than those who scored lower on the Behavioral Traits Survey: Self-Report.

H2: I hypothesize those who score high on the Behavioral Traits Survey: Self-Report will score higher on the PAI Aggression scale than those who scored lower on the Behavioral Traits Survey: Self-Report.

H3: I hypothesize those who score high on the Behavioral Traits Survey: Self-Report will score higher on the PAI Drug scale than those who scored lower on the Behavioral Traits Survey: Self-Report.

Chapter 2

Methods

Prior Research

The current research is an extension of prior study conducted by Mushlitz (2020) and includes similar methods.

Participants

The current study participants were 25 adults who self-reported they had current or previous involvement in the criminal justice system. The participants included men ($n = 12$) and women ($n = 13$) who were recruited through a local probation program and online advertising via Craigslist (due to COVID restrictions of the probation program). They ranged in age from 18 to 64 years ($M = 34.64$, $SD = 6.78$). The participants included White ($n = 15$), Black or African American ($n = 5$), Hispanic or Latino ($n = 3$), and American Indian or Alaska Native ($n = 2$) adults. The majority of participants ($n = 22$; 88%) identified being right-handed and felt most comfortable ($n = 24$; 96%) speaking English.

Records were reviewed to confirm all participants completed the self-report survey, the Behavioral Traits Survey: Self-Report, the PAI, and indicated they had past or current involvement in the criminal justice system. Those who did not complete all three sections were excluded from the current study. Of the 50 adults who completed an online intake survey, 27 indicated they were involved with the legal system (either currently or in the past) and 19 indicated they had no past or current involvement in the legal system. Of the 27 respondents who self-reported they had some legal involvement, two were ineligible because they did not complete the PAI.

Participants who were recruited online and completed the Behavioral Traits Survey: Self-Report were compensated with a gift card worth \$5.00 which was sent to their email ($n = 27$) and those who also completed the PAI were compensated again with a gift card worth \$15.00 sent to their email. The participants recruited via their probation officer received a gift card worth \$5.00 from their probation officer if they completed the Behavioral Traits Survey: Self-Report ($n = 2$) and the participant who also completed the PAI received a free month of probation through a fee-

waiver from their probation officer. Only one participant, referred through probation, completed both the online survey and PAI.

Materials

The following instruments were administered online to each participant: standardized intake in survey form (online survey), Behavioral Traits Survey: Self-Report, and the PAI.

Standardized Intake in Survey Form (online survey)

The participants completed a standardized intake interview online, through Survey Monkey, that addressed a number of aspects of their lives including: demographics, legal involvement (prior and current legal involvement), substance use (parental and individual exposure to substances), family history (such as maternal information, developmental milestones, children, family relationships, etc.), education history (such as social relationships, extracurricular activities, IEP, special education, etc.), occupational history, medical and mental health history (prior diagnoses, accidents, and concussions). Participants were given the option to continue or skip sections regarding questions related to education, employment, medical and mental health history. The standardized intake was administered online (see Appendix A).

Behavioral Traits Survey: Self Report

The Behavioral Traits Survey: Self Report (BTS: Self-Report; Adapted from the FAS BeST; DeVries et al, 2001) was employed by Mushlitz (2020) and adapted the original Fetal Alcohol Spectrum Behavioral Survey of Traits (FAS BeST) questions in an online format to provide a self-report measure assessing adults with FAS. The online form of the BTS: Self-Report consisted of 52 items that are rated on a Likert scale (0, 1, 2, 3) and remained the same as the paper form (see Appendix B). Mushlitz (2020) evaluated the reliability and validity of the BTS: Self-Report, Mushlitz (2020) found the BTS: Self-Report reliability was established for the

court group but not the online group. The validity for the BTS: Self-Report was not supported due to the lack of maternal information regarding prenatal alcohol exposure. Mushlitz concluded a larger sample would be needed to continue to support the reliability of the BTS: Self-Report.

Personality Assessment Inventory (PAI) through PARiConnect (PIC)

The PAI is a 344-item self-administered, reliable, and valid measure that is used to identify personality traits and characteristics (Morey, 1991). The PAI has a high degree of internal consistency, including medium alphas and test-retest for full scales of .81, .86, and .82 across samples. Validity has been measured and demonstrated convergent and discriminant validity (Morey, 1991). The PAI was administered online through PARiConnect via email.

Procedure

The original Institutional Review Board (IRB) was approved for Glenna Andrews, Ph.D., and Patricia Warford Psy.D., by the George Fox University Human Research Review Committee which covered Mushlitz's (2020) study. The IRB was amended to expand to other counties and programs. The original plan was to recruit participants in probation orientation meetings, when individuals would meet with their probation officer and the researcher on an individual basis to build rapport and encourage participation. Participants would have been recruited and referred through their probation officer, give verbal consent and then receive an internet link to complete the surveys through Survey Monkey and the PAI website. Due to the COVID-19 pandemic, the probation orientation meetings were cancelled. At that point, IRB approval from the George Fox University Human Research Review Committee expanded to online recruiting through Craigslist. Participants recruited through this online advertising gave consent through the informed consent embedded into the online survey. Those who declined to give consent on the informed consent were thanked and the online survey was ended. Participants who consented

responded to an online survey that consisted of demographics, BTS: Self-Report, and the intake questionnaire, followed by an invitation to complete a PAI. The PAI was administered via PARiConnect and a link to that site was sent only to those participants who agreed to complete the PAI. Participants were compensated by the researcher from the online group and participants from probation were compensated by their probation officer upon completion of the online survey and the PAI. Supervision was provided by a licensed psychologist.

Chapter 3

Results

BTS: Self-Report Characteristics

The demographics of the BTS: Self-Report inventories for the Mushlitz (2020) online sample and the current sample can be seen in Table 1. BTS: Self-Report scores for the current sample were significantly higher than those in the Mushlitz (2020) online sample, $t(24) = 6.40$, $p < .001$, Hedge's $g = 22.92$.

Table 1

BTS: Self-Report Range of Total Scores

Sample	Mushlitz online sample	Current sample with PAI
Range	51	80
Minimum	26	45
Maximum	76	125
Mean	48.94	77.36
Median	48.00	72.00
Mode	25.00	60.00
Variance	205.53	492.74
Skewness	0.33	0.84
Kurtosis	-0.65	-0.27

Sample	Mushlitz online sample	Current sample with PAI
Sample size	31	25

Note. BTS: Self-Report = Behavioral Traits Survey: Self-Report; PAI = Personality Assessment Inventory.

The original FAS BeST (Colunga et al., 2017) established a cutoff of 67 that differentiated children to young adults who had an FASD from those who had other diagnoses (e.g., ADHD) and controls. Individuals with scores below a score of 67 are considered low risk for FAS while those with scores of 67 and above are considered high risk. Based upon their total score, nine participants from the current sample fell below the cutoff of 67 for the BTS: Self-Report and 16 fell above the cutoff score. When a higher cutoff score of 75 was employed (accounting for more sensitivity), 17 fell below the cutoff score of 75 on the BTS: Self-Report and eight fell above this cutoff score.

Gender was independent of BTS: Self-Report risk status, both when the score of 67 was used as a cutoff ($\chi^2(1) = 3.44, p = .06, \lambda = .33$) and when 75 was used as the cutoff ($\chi^2(1) = 0.07, p = .79, \lambda = .05$). Ethnicity (white vs nonwhite) also was independent of BTS: Self-Report risk status, both when the score of 67 was used as a cutoff ($\chi^2(1) = 0.26, p = .61, \lambda = .26$) and when 75 was used as the cutoff ($\chi^2(1) = 0.49, p = .48, \lambda = .16$). Participants whose BTS: Self-Report scores indicate risk for FAS (i.e., are higher) are significantly younger, both when the cutoff scores of 67 ($t(23) = 1.74, p = .047$ one-tailed, Hedges $g = 6.73$) and 75 were used ($t(23) = 2.27, p = .02$ one-tailed, Hedges $g = 6.47$).

Legal involvement of the current participants was based on responses to self-report clinical intake questions. In an exploration of participants' legal involvement, participants reported they completed drug court ($n = 11; 44\%$), many had been charged with misdemeanors

($n = 14$; 56%) and with felonies ($n = 8$; 32%). Most participants reported they had been arrested previously: 60% reported they had been arrested ($n = 15$) and 40% indicated they had never been arrested ($n = 10$). About half of the sample ($n = 12$; 48%) had been incarcerated, either in jail or prison while the other half ($n = 13$; 52%) reported they had never been incarcerated. Probation status (never $n = 9$, past $n = 8$, or currently $n = 8$) was independent of a BTS: Self-Report scores above or below the 67 cutoff, $\chi^2(2) = 4.38, p = .11, \lambda = .20$. Using the score of 75 as the BTS: Self-Report cutoff still indicated that probation status and BTS: Self-Report scores were independent, $\chi^2(2) = 5.60, p = .06, \lambda = .13$.

Validity of BTS: Self-Report

There are concerns with the validity of the BTS: Self-Report. Specifically, there are only small correlations between the BTS: Self-Report scores and participants' reports that their mother used alcohol ($r = .17$, point-biserial), tobacco ($r = -.14$), or drugs ($r = -.03$, point-biserial) during her pregnancy which resulted in their birth.

Relationship of BTS: Self-Report and PAI

Table 2 shows the number of PAI protocols considered spoiled because of elevated scores on validity subscales.

Table 2

PAI Validity Subscales Descriptive Data

	<i>M</i>	<i>SD</i>	Number considered unreliable
Inconsistency	61.84	10.01	5
Infrequency	76.92	17.18	16
Positive Impression	43.20	8.63	9

	<i>M</i>	<i>SD</i>	Number considered unreliable
Negative Impression	80.40	18.09	0

Note. PAI = Personality Assessment Inventory.

Participants whose BTS: Self-Report scores indicate risk for FAS (i.e., are higher) are significantly more likely to exceed the cutoff on at least one PAI validity scale, both when the BTS: Self-Report cutoff scores of 67 ($\chi^2(1) = 5.30, p = .02, \lambda = .25$) and 75 were used ($\chi^2(1) = 4.58, p = .03, \lambda = .18$).

Hypothesis 1

This hypothesis proposed that BTS: Self-Report and the antisocial feature scale on the PAI would show a stronger positive correlation for scores above 75 than for those using a cutoff score of 67. Table 3 shows the correlations of the BTS: Self-Report and the PAI Antisocial subscales at both cutoff values. BTS: Self-Report scores above 67 and the antisocial scale were found to be strongly correlated, $r(23) = .66, p < .001$ while the BTS: Self-Report scores above 75 and the antisocial scale were found to be moderately correlated, $r(23) = .41, p = 0.04$. A binomial test of the difference between two correlations indicates that these correlations are not statistically significantly different, $z = 1.18, p = .12$ (one-tailed).

Table 3

Correlations of the BTS: Self-Report and the PAI Antisocial Subscales at Both Cutoff Values

	BTS cutoff 67		BTS cutoff 75	
	All	Invalid Excluded	All	Invalid Excluded
Antisocial Scale	.66**	.76	.41*	a

	BTS cutoff 67		BTS cutoff 75	
	All	Invalid Excluded	All	Invalid Excluded
Antisocial Behavior	.42*	.70	.02	a
Egocentricity	.53**	.59	.34	a
Stimulus Seeking	.54**	.52	.61**	a
Sample size	25	7	25	0

Note. BTS: Self-Report = Behavioral Traits Survey: Self-Report; PAI = Personality Assessment Inventory.

**significant at the 0.01 level. *significant at the 0.05 level

a There are no valid PAI profiles with BTS: Self-Report scores above 75.

Hypothesis 2

This hypothesis proposed the participants who scored above the cutoff of 75 on the BTS: Self-Report would show a stronger relationship on the aggression features scale of the PAI than those who scored above the 67-cutoff score. Table 4 shows the correlations of the BTS: Self-Report and the PAI Aggression subscales at both cutoff values. BTS: Self-Report scores above 67 and the aggression scale were found to be moderately correlated, $r(23) = .49, p = .01$ and the BTS: Self-Report scores above 75 and the antisocial scale also were found to be moderately correlated, $r(23) = .44, p = .03$. A binomial test of the difference between two correlations indicates that these correlations are not statistically significantly different, $z = 0.21, p = .42$ (one-tailed).

Table 4

Correlations of the BTS: Self-Report and the PAI Aggression Subscales at Both Cutoff Values

	BTS cutoff 67		BTS cutoff 75	
	All	Invalid Excluded	All	Invalid Excluded
Aggression scale	.49*	.37	.44*	a
Aggressive Attitude	.12	-.33	.22	a
Verbal Aggression	.31	.55	.17	a
Physical Aggression	.64**	.61	.56**	a
Sample size	25	7	25	0

Note. BTS: Self-Report = Behavioral Traits Survey: Self-Report; PAI = Personality Assessment Inventory.

**significant at the 0.01 level. *significant at the 0.05 level

a There are no valid PAI profiles with BTS: Self-Report scores above 75.

Hypothesis 3

This hypothesis proposed that the participants who scored above the cutoff of 75 on the BTS: Self-Report would show a stronger relationship on the alcohol and drug subscales of the PAI than those who scored above the 67-cutoff score. Table 5 shows the correlations of the BTS: Self-Report and the PAI Substance Use scales at both cutoff values. BTS: Self-Report scores above 67 were found to be strongly correlated with the alcohol scale, $r(23) = .63, p = .001$ and drug scale, $r(23) = .64, p = .001$. BTS: Self-Report scores above 75 were found to have no relationship with the alcohol and drug scale. Binomial tests of the difference between two correlations indicate that for both the Alcohol, $z = 1.72, p = .04$ (one-tailed), and Drug Use subscales, $z = 1.95, p = .03$ (one-tailed), using the 67-cutoff resulted in significantly higher correlations.

Table 5

Correlations of the BTS: Self-Report and the PAI Substance Use Subscales at Both Cutoff Values

	All	Invalid Excluded	All	Invalid Excluded
Alcohol Use scale	.63**	.83**	.22	a
Drug Use scale	.64**	.95**	.17	a

Note. BTS: Self-Report = Behavioral Traits Survey: Self-Report; PAI =

Personality Assessment Inventory.

**significant at the 0.01 level. *significant at the 0.05 level

a There are no valid PAI profiles with BTS: Self-Report scores above 75.

Chapter 4

Discussion

This study sought to expand on prior research conducted by Mushlitz (2020) evaluating the BTS: Self-Report (as adapted for adults from the FAS BeST) measure as a screener for FASD. In the present study, we explored the BTS: Self-Report as a reliable and valid screening tool for FAS. Furthermore, we examined the behavioral characteristics of adults who self-reported having contact with the criminal justice system. Specifically, we explored the behavioral characteristics of justice-involved individuals using the BTS: Self-Report and PAI. We examined the validity scales in addition to the aggression, antisocial, drug, and alcohol scales.

Reliability

One of the foci of the current study was to examine whether the BTS: Self-Report was a reliable measure to screen for FAS in adults. Reliability was established for the BTS: Self-Report

and when compared to Mushlitz's online sample. Based on the analysis of the BTS: Self-Report in the current study, results indicated that it was a reliable screener. Although, it should be taken into consideration that this screener is still new and additional research is needed to further support the reliability of the screener in larger adult sample sizes. The screener has the potential to be a reliable screener for FAS Behavioral profiles and increase the number of screening measures and tools for FASD. Previously literature demonstrated there is a lack of research regarding the prevalence of FASD in the legal system and this screener could provide valuable insight into the prevalence of FASD in the legal system.

Validity

Validity of the BTS: Self-Report was not able to be established because of high rates of invalid profiles on the PAI. Over two-thirds of the sample produced invalid PAI profiles. Individuals were more likely produce invalid profiles when they were considered to be at-risk for FAS. Individuals with invalid profiles were more likely to respond randomly and carelessly. Similarly, validity could not be established based on prenatal exposure to substances. There was not enough evidence to establish validity based on prenatal exposure and thus further research is needed.

PAI Scales

One of the main goals of the current study was to investigate the behavioral characteristics of individuals who had contact with the criminal justice system and FAS behavioral profiles. Prior research indicated that early detection, diagnosis, and intervention for FAS are essential for treatment planning. This study attempted to use the PAI as a measure to screen for early detection of FAS. As such, all three hypotheses were supported.

This study revealed a relationship between BTS: Self-Report and antisocial scale. Individuals who scored higher on the BTS: Self-Report reported an increase in antisocial features including egocentricism and stimulus seeking subscales. Individuals endorsed having little regard for others, seeking stimulation, and may become easily bored without consistent stimulation. The BTS: Self-Report and PAI appeared to be a good indicator of antisocial behaviors with FAS behavioral profiles.

The second hypothesis was supported and revealed the BTS: Self-Report and the aggression scale on the PAI had a relationship. Higher BTS: Self-Report scores showed an increase in aggression, specifically physical aggression. However, there was no relationship between BTS: Self-Report scores above 67 (including 75) and aggressive attitude and verbal aggression. Individuals with FAS behavioral profiles are more likely to show physical aggression including threats of violence, physical fights, and damage to property.

The last hypothesis of this study was to investigate the relationship between BTS: Self-Report and substance use. This study revealed a relationship between BTS: Self-Report scores and substance use amongst participants. Higher scores on the BTS: Self-Report showed an increase in alcohol consumption and drug use. However, there was no relationship between individuals who scored at or above 75 and substance use (alcohol and drug use). Overall, when considering the total scores, there was a moderate relationship between BTS: Self-Report and substance use. Furthermore, there was a relationship between alcohol consumption and drug use. Individuals who scored high on alcohol consumption also scored high on drug use. This is particularly important to take into consideration when evaluating individuals for FASD.

Limitations and Clinical Implications

There are significant limitations to this study that are essential to discuss when considering the current body of literature related to FASD prevalence in the legal system and future directions. First, limitations were identified in the sample collection. Due to the COVID-19 pandemic, recruitment for participation in court populations was significantly limited and hindered the ability to collect data with this population. Majority of the sample was obtained via online advertising. Furthermore, all materials were created to be accessible online for participants to minimize exposure and increase participations. This created an extra layer of risk in the study for many reasons.

The study relied on good faith with the participants. Craigslist was considered a viable source to recruit participants and collect data based on prior research by DePierre (2014). DePierre (2014) revealed that responses from participants who were recruited from Craigslist did not differ from the general population norms on the Patient-Reported Outcome Measurement Information System (i.e., PROMIS) developed by the National Institutes of Health (NIH). Thus, this study recruited participants through Craigslist to accommodate for the limitations in recruiting participants associated with the COVID-19 pandemic. After further exploration of the data, participants appeared to lack attention to the questions and randomly responded. This could be an attempt to get through the study and receive the compensation offered. This could also be indicative of potential malingering and should be an area of caution for further research. Further, because participants were required to move to a different website to complete the PAI, is unclear whether the same individuals completed the online survey and corresponding PAI. It also is worth a reminder that the online responses could not be validated by clinical observations.

Finally, adapting the original surveys to be more accessible online, increased the number of item non-responses.

The second limitation in this study was there were no ways to validate whether participants had FASD, other than self-report responses. The BTS: Adult Other rating form, typically filled out by a parent or other family member of the person who is suspected to have FASD, could not be included in this study. Most participants provided inaccurate names of the family member, making it difficult to decipher who the Adult Other corresponded to. In addition, information on the Adult Other was often not entirely completed. Further, the self-report of mother's drinking behavior during pregnancy is highly suspect. Finally, there was no request for information about a formal diagnosis of FASD. The sole information regarding FAS behavioral characteristic was based on BTS: Self-Report scores.

In conclusion, considering the limitations, particularly the lack of initial court population and the use of online measures may have yielded different results. As further research develops, ongoing data collection with the BTS: Self-Report screener is essential. Increasing the number of the participants referred from court populations will add valuable to effective screen for FASD in individuals involved with the legal system.

Summary and Recommendations

Based on our findings, this study added valuable information to the growing body of literature in FASD within the legal system. This study is a steppingstone for further research to expand on FAS behavioral profile screeners. Results indicate that the individuals with FAS behavioral profiles may display antisocial tendencies, physical aggression, and vulnerability to using substances. It is recommended future research expand on the psychometric description of

the BTS: Self-Report as a screener. Currently, the concern remains as to whether the BTS: Self-Report can be used as a stand-alone measure.

The current study recruited participants through Craigslist. Further research should consider recruiting participants solely from drug court or probation. The lack of rapport with the online sample raised concern in the response style of participants. Individuals who completed the BTS: Self-Report had high scores and were more likely have invalid PAI profiles. This indicates that individuals completing the BTS: Self-Report may be unreliable reporters. I recommend that validity scales or malingering scales always be used when the BTS: Self-Report is administered. BTS: Self-Report test developers might consider developing embedded validity scales for the measure. Until such validity scales are developed, the BTS: Self-Report should be used in conjunction with a screener that is completed by someone who knows the individual (i.e., the Other-Report). Further research is needed to continue to explore and understand the personality and behavioral characteristics of individuals with FAS behavioral profiles to provide a buffer against recidivism and address clinical treatment needs.

References

- Alvik, A., Aalen, O. O., & Lindemann, R. (2013). Early fetal binge alcohol exposure predicts high behavioral symptom scores in 5.5-year-old children. *Alcohol Clin Exp Res*, 37, 1945–62.
- Bertrand, J., Floyd, R. L., Weber, M. K., O'Connor, M., Riley, E. P., Johnson, K. A., ... National Task Force on FAS/FAE (2004). *Fetal Alcohol Syndrome: Guidelines for Referral and Diagnosis*. Centers for Disease Control and Prevention.
- Bisgard, E. B., Fisher, S., Adubato, S., & Louis, M. (2010). Screening, diagnosis, and intervention with juvenile offenders. *The Journal of Psychiatry & Law*, 38(4), 475–506. <https://doi.org/10.1177/009318531003800406>
- Brintnell, E. S., Sawhney, A. S., Bailey, P. G., Nelson, M., Pike, A. D., & Wielandt, P. (2019). Corrections and connection to the community: A diagnostic and service program for incarcerated adult men with FASD. *International Journal of Law and Psychiatry*, 64, 8–17. <https://doi-org.georgefox.idm.oclc.org/10.1016/j.ijlp.2018.12.005>
- Burd, L., Selfridge, R. H., Klug, M. G., & Bakko, S. A. (2004). Fetal alcohol syndrome in the United States corrections system. *Addiction Biology*, 9(2), 169-176.
- Coles, Grant, T. M., Kable, J. A., Stoner, S. A., & Perez, A. (2022). Prenatal alcohol exposure and mental health at midlife: A preliminary report on two longitudinal cohorts. *Alcoholism, Clinical and Experimental Research*, 46(2), 232–242. <https://doi.org/10.1111/acer.14761>
- Colunga, A., Andrews, G., Seiders, J., & Mara, T. (2017). FAS BeST: Accurately screens children with fetal alcohol syndrome. [Poster]. Presented at the National Academy of Neuropsychology Conference, Boston, MA.

- Conry, J., & Fast, D. K. (2010). Mental health issues for people with fetal alcohol spectrum disorders in the criminal justice system. *Canadian Journal of Community Mental Health*, 29(2), 65–70. <https://doi-org.georgefox.idm.oclc.org/10.7870/cjcmh-2010-0022>
- DePierre, L. M. (2014). Recruiting Participants from Craigslist: Why and Why Not. [ProQuest Information & Learning]. *Dissertation Abstracts International: Section B: The Sciences and Engineering* (Vol. 81, Issue 10–B).
- DeVries, J, Kenney, V., Waller, A., & Andrews, G. (2001). FAS BeST. Retrieved from www.fetalalcoholsyndrome.com.
- Famy, C., Streissguth, A. P., & Unis, A. S. (1998). Mental illness in adults with fetal alcohol syndrome or fetal alcohol effects. *The American Journal of Psychiatry*, 155(4), 552–554. <https://doi-org.georgefox.idm.oclc.org/10.1176/ajp.155.4.552>
- Hughes, N., Clasby, B., Chitsabesan, P., & Williams, H. (2016). A systematic review of the prevalence of foetal alcohol syndrome disorders among young people in the criminal justice system. *Cogent Psychology*, 3(1).
- Inkelis, S. M., Moore, E. M., Bischoff-Grethe, A., & Riley, E. P. (2020). Neurodevelopment in adolescents and adults with fetal alcohol spectrum disorders (FASD): A magnetic resonance region of interest analysis. *Brain Research*, 1732. <https://doi-org.georgefox.idm.oclc.org/10.1016/j.brainres.2020.146654>
- Landgraf, M. N., Nothacker, M., Kopp, I. B., & Heinen, F. (2013). The diagnosis of fetal alcohol syndrome. *Dtsch Arztebl Int.* 2013;110(42):703-710. doi:10.3238/arztebl.2013.0703
- Lane, K. A., Stewart, J., Fernandes, T., Russo, N., Enns, J., & Burack, J. A. (2014). Complexities in understanding attentional functioning among children with fetal alcohol spectrum

- disorder. *Frontiers in Human Neuroscience*, 8. <https://doi-org.georgefox.idm.oclc.org/10.3389/fnhum.2014.00119>
- Lange, S., Probst, C., Gmel, G., Rehm, J., Burd, L., & Popova, S. (2017). Global prevalence of fetal alcohol spectrum disorder among children and youth: A systematic review and meta-analysis. *JAMA pediatrics*, 171(10), 948–956. <https://doi.org/10.1001/jamapediatrics.2017.1919>
- Lange, S, Shield, K, Rehm, J, & Popova, S. (2013). Prevalence of fetal alcohol spectrum disorders in child care settings: A meta-analysis. *Pediatrics* (Evanston), 132(4), e980–e995. <https://doi.org/10.1542/peds.2013-0066>
- Mattson, S. N., Bernes, G. A., & Doyle, L. R. (2019). Fetal alcohol spectrum disorders: A review of the neurobehavioral deficits associated with prenatal alcohol exposure. *Alcoholism, Clinical and Experimental Research*, 43(6), 1046–1062. <https://doi.org/10.1111/acer.14040>
- McDougall, S., Finlay-Jones, A., Arney, F., & Gordon, A. (2020). A qualitative examination of the cognitive and behavioural challenges experienced by children with fetal alcohol spectrum disorder. *Research in Developmental Disabilities*, 104. <https://doi-org.georgefox.idm.oclc.org/10.1016/j.ridd.2020.103683>
- Morey, L. (1991). *The Personality Assessment Inventory: Professional Manual*. Psychological Assessment Resources, Inc.
- Mushlitz, A. (2020). Defining an adult screener for fetal alcohol spectrum disorder: A study of court populations [ProQuest Information & Learning]. *In Dissertation Abstracts International: Section B: The Sciences and Engineering* (Vol. 81, Issue 10–B).

- O'Leary, & Bower, C. (2012). Guidelines for pregnancy: What's an acceptable risk, and how is the evidence (finally) shaping up? *Drug and Alcohol Review*, 31(2), 170–183.
<https://doi.org/10.1111/j.1465-3362.2011.00331.x>
- O'Neil, E. (2011, May 09). *The Discovery of Fetal Alcohol Syndrome*. Embryo Project Encyclopedia. ISSN: 1940-5030 <http://embryo.asu.edu/handle/10776/2100>.
- O'Neil, E., (2014, January 28) *Fetal Alcohol Syndrome (FAS)*. Embryo Project Encyclopedia. ISSN: 1940-5030 <http://embryo.asu.edu/handle/10776/7518>.
- Paley, B., & Auerbach, B. E. (2010). Children with fetal alcohol spectrum disorders in the dependency court system: Challenges and recommendations. *The Journal of Psychiatry & Law*, 38(4), 507–558. <https://doi.org/10.1177/009318531003800407>
- Popova, S., Lange, S., Bekmuradov, D., Mihic, A., & Rehm, J. (2011). Fetal alcohol spectrum disorder prevalence estimates in correctional systems: A systematic literature review. *Canadian Journal of Public Health*, 102(5), 336-40. Retrieved from <https://georgefox.idm.oclc.org/login?url=https://www-proquest-com.georgefox.idm.oclc.org/docview/897665183?accountid=11085>
- Popova, S., Lange, S., Probst, C., Gmel, G., & Rehm, J. (2017). Estimation of national, regional, and global prevalence of alcohol use during pregnancy and fetal alcohol syndrome: A systematic review and meta-analysis. *The Lancet Global Health*, 5(3), e290–e299.
[https://doi.org/10.1016/S2214-109X\(17\)30021-9](https://doi.org/10.1016/S2214-109X(17)30021-9)
- Popova, S., Lange, S., Shield, K., Mihic, A., Chudley, A. E., Mukherjee, R. A. S., Bekmuradov, D., & Rehm, J. (2016). Comorbidity of fetal alcohol spectrum disorder: A systematic review and meta-analysis. *The Lancet*, 387(10022), 978–987. [https://doi-org.georgefox.idm.oclc.org/10.1016/S0140-6736\(15\)01345-8](https://doi-org.georgefox.idm.oclc.org/10.1016/S0140-6736(15)01345-8)

- Popova, S., Lange, S., Shield, K., Burd, L., & Rehm, J. (2019). Prevalence of fetal alcohol spectrum disorder among special subpopulations: A systematic review and meta-analysis. *Addiction*, 114(7), 1150–1172. <https://doi-org.georgefox.idm.oclc.org/10.1111/add.14598>
- Raldiris, T. L., Bowers, T. G., & Towsey, C. (2018). Comparisons of intelligence and behavior in children with fetal alcohol spectrum disorder and ADHD. *Journal of Attention Disorders*, 22(10), 959–970. <https://doi-org.georgefox.idm.oclc.org/10.1177/1087054714563792>
- Robins, J., & Andrews, G., (2009). FAS BeST: Reliability and validity study. [Poster]. Western Psychological Association Convention, Portland, OR.
- Ruiz, M. A., Cox, J., Magyar, M. S., & Edens, J. F. (2014). Predictive validity of the Personality Assessment Inventory (PAI) for identifying criminal reoffending following completion of an in-jail addiction treatment program. *Psychological Assessment*, 26(2), 673–678. <https://doi-org.georgefox.idm.oclc.org/10.1037/a0035282>
- Sarman, I. (2018). [Review shows that early foetal alcohol exposure may cause adverse effects even when the mother consumes low levels]. *Acta Paediatrica*, 107(6), 938–941. <https://doi-org.georgefox.idm.oclc.org/10.1111/apa.14221>
- Streissguth, A. P., Barr, H. M., Kogan, J., & Bookstein, F. L. (1996). *Understanding the occurrence of secondary disabilities in clients with Fetal Alcohol Syndrome (FAS) and Fetal Alcohol Effects (FAE)*: [Final report to the Centers for Disease Control and Prevention]. University of Washington, Fetal Alcohol and Drug Unit.
- Streissguth, A. P., Bookstein, F. L., Barr, H. M., Sampson, P. D., O'Malley, K., & Young, J. K. (2004). Risk factors for adverse life outcomes in Fetal Alcohol Syndrome and fetal

alcohol effects. *Journal of Developmental and Behavioral Pediatrics*, 25(4), 228–238.

<https://doi-org.georgefox.idm.oclc.org/10.1097/00004703-200408000-00002>

Wang, E. W., Rogers, R., Giles, C. L., Diamond, P. M., Herrington-Wang, L. E., & Taylor, E. R.

(1997). A pilot study of the Personality Assessment Inventory (PAI) in corrections:

Assessment of malingering, suicide risk, and aggression in male inmates. *Behavioral*

Sciences & the Law, 15(4), 469–482. <https://doi->

[org.georgefox.idm.oclc.org/10.1002/\(SICI\)1099-0798\(199723/09\)15:4<469::AID-](https://doi-org.georgefox.idm.oclc.org/10.1002/(SICI)1099-0798(199723/09)15:4<469::AID-)

[BSL279>3.0.CO;2-A](https://doi-org.georgefox.idm.oclc.org/10.1002/(SICI)1099-0798(199723/09)15:4<469::AID-BSL279>3.0.CO;2-A)

Wattendorf, D. J., & Muenke, M. (2005). Fetal alcohol spectrum disorders. *American Family*

Physician, 72(2), 279–285.

Williams, J. F., Smith, V. C., & Committee on substance abuse (2015). Fetal alcohol spectrum

disorders. *Pediatrics*, 136(5), e1395–e1406. <https://doi.org/10.1542/peds.2015-3113>

Appendix A

Code Number: _____

Structured Intake Interview Drug Court Study

Evaluator: _____

Date of Intake: _____

I have a series of questions that I would like to ask you. This is for the research and will not be disclosed to anyone without your permission. It would be very helpful if you can answer all of the questions as completely as possible. If a question makes you feel too comfortable, you can tell me you would like to skip that one. Do you have any questions before we start this part of the evaluation?

Volunteer Information:

General

Age: _____ Date of Birth: _____ (MM/DD/YYYY)

Gender: _____

Handedness: Right Left Ambidextrous

Ethnicity: _____ First Language: _____

Other languages spoken/understood: _____

Education

Did you attend:

Preschool YES No

Kindergarten Yes No what age? _____

What was your experience of 1st through 5th grade like?

Did you repeat a grade? Yes No

If yes, which grade? _____

Were you on an Individualize Education Plan? Yes No

What was your experience like in Middle School?

What type of grades did you earn? _____

Favorite subject in middle school? _____

Most difficult subject in middle school? _____

Did you graduate from high school? Yes No

If yes, what year _____ GPA: _____

If no, how far did you go in high school: _____

What was the reason you stopped attending?

Did you play sports during school? Yes No

If yes, which sport?

If yes, when did you play?

Did you attend college? Yes No

Is yes, where? _____

What was your major or focus/program? _____

Did you earn a degree? Yes No Type: _____

Did you have friends in:

elementary school	Yes	No	Close?	Yes	No
middle school	Yes	No	Close?	Yes	No
high school	Yes	No	Close?	Yes	No

Do you currently have friends? Yes No

What are they like?

change in your ability to smell	Yes	No	_____
changes in your ability to see	Yes	No	_____
changes in your memory	Yes	No	_____
trouble getting others to understand what your are saying	Yes	No	_____
get lost in familiar places	Yes	No	_____
have trouble sleeping	Yes	No	_____
depression	Yes	No	_____
anxiety	Yes	No	_____
Other issues	_____		

Have you ever had a head injury? Yes No
 If yes, how old were you? _____

What caused the head injury?

Did you go to the emergency room/hospital/urgent care for treatment? Yes No

Alcohol & Drugs

How old were you when you first drank alcohol? _____

Were you alone or with a group of people? _____

How old were you when you first passed out from alcohol? _____

Did your biological father consume alcohol? _____
 become drunk more than once/week? YES No
 pass out at home from drinking Yes No

Did your biological mother consume alcohol? _____
 become drunk more than once/week? YES No
 pass out at home from drinking Yes No
 drink when she was pregnant? YES No

How old were you when you first starting using drugs? _____

What was the first drug used? _____

What others drugs have you used?

How often did you use prior to your most recent arrest? daily, 4 times/week, 2 times/week

What has been your drug of choice most recently? _____

Did your biological father use drugs? _____

more than once/week? YES No
at home Yes No

Did your biological mother use drugs? _____

more than once/week? YES No
at home Yes No
when she was pregnant? YES No

Do you use tobacco products? Yes No

If yes, which ones? _____

How old were you when you started? _____

What is the amount and frequency of your current use?

Did your biological father use tobacco? _____

more than once/week? YES No
at home Yes No

Did your biological mother use tobacco? _____

more than once/week? YES No
at home Yes No
when she was pregnant? YES No

What types of treatment programs have you been in?

What was the most helpful and why?

Family:

Marital Status: Single Married/cohabitating Separated Divorced Widowed

Do you have children? Yes No

If yes, how many: _____

Gender and ages: _____

With whom do the children currently live:

Relationship to you:

Do you have siblings? Yes No

If yes, how many? _____

Where do you belong in the sibling? 1st born, 2nd child, 3rd child,

Are you currently in contact with any of your siblings? Yes No

If yes, what is your relationship like with this/these siblings?

What was your mother's health status when she was pregnancy with you? Good Poor I Don't Know

Were you born: full-term premature (how early? _____)

At approximately what age did you:

crawl _____ walk _____

say 1 word _____ say 2 + words _____

speak in sentences _____

know your numbers _____ say your alphabet _____

begin reading: _____

Is there anything else that you think would be helpful for me to know about you as we finish this part of the evaluation?

Appendix B

Behavioral Traits Survey: Self Report

Name: _____ Date of Birth: _____
 Gender: _____ Today's Date: _____

Read each item carefully considering your own interactions and behaviors. Check the for each item that most closely identifies the frequency with which this adult displays the behavior.

<i>Behavior</i>	<i>Never</i>	<i>Sometimes</i>	<i>Frequently</i>	<i>Always</i>
1. I manage my life better when I am accountable to someone				
2. I can easily manipulate other people				
3. I am irritable when my sleep is disrupted				
4. I am surprised by how people respond to what I say				
5. I get in trouble for my behaviors or things I do				
6. I get irritated more easily in public than at home				
7. People fool me into thinking that they are my friend.				
8. People tell me I do things without thinking				
9. People tell me that I am unpredictable				
10. I have done things that are risky or dangerous				
11. I enjoy activities that others think are risky				
12. I have done things because of pressure from other people				
13. As a child I was known for breaking the rules more than following them				
14. I function better with more structure				
15. I lose track of time				
16. I have been in trouble because of my spending habits				
17. I don't like change				
18. I was talked into a large purchase by a very good salesperson				
19. If I could get away with it, I would forget about showering				
20. I get blamed for things that are not my fault				
21. Even when I have a plan, I don't follow it				
22. I follow the law*				

<i>Behavior</i>	<i>Never</i>	<i>Sometimes</i>	<i>Frequently</i>	<i>Always</i>
23. I experience depression				
24. I can become easily overwhelmed/overloaded				
25. I lie to others				
26. I have borrowed family member's belongings without asking				
27. People think I am more capable than I am				
28. I get angry easily				
29. When I am upset, I take it out on something around me				
30. When I get upset, I hurt people around me				
31. It is difficult for me to understand others' emotions				
32. My moods can easily change without cause				
33. I have continued a behavior despite getting in trouble for it				
34. I get in trouble, even when I did nothing wrong				
35. People try to make me feel guilty for no reason				
36. I take care of myself first				
37. I have trouble staying focused				
38. When I get in trouble, I ignore it				
39. I like things to be simple and easy				
40. I like to live in the here and now				
41. I don't like to wait for things I want				
42. When I do something wrong, I feel bad about it*				
43. Other people see me as disabled*				
44. All my life I have done things my own way				
45. I can get people to do things for me				
46. I hold grudges				
47. People tell me that I just don't get it				
48. I have difficulty understanding what people want from me				
49. I have thought about how I could harm others*				
50. When others try to tell me I did something wrong, I get angry				
51. I find a way around the rules				
52. I have trouble remembering rules				

<i>Behavior</i>	<i>Never</i>	<i>Sometimes</i>	<i>Frequently</i>	<i>Always</i>
53. I have been diagnosed with a mental health disorder				
<i>To Be Completed by Test Proctor</i> Total 1-53				