Resiliency in Post-Secondary: Perspectives of Students with Fetal Alcohol Spectrum Disorder and Attention Deficit Hyperactivity Disorder

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Abstract

The purpose of this study was to describe the post-secondary experiences of students diagnosed with Fetal Alcohol Spectrum Disorder (FASD) and Attention Deficit Hyperactivity Disorder (ADHD) and to determine the protective factors that have fostered success, in hopes to create a better understanding of how success is achieved in these individuals. Merriam's (2015) basic interpretive qualitative approach was used and data was be collected through semi-structured interviews. Data was analyzed thematically and was interpreted using resiliency theory as a framework (Luthar, Cicchetti, & Becker, 2000; Masten 2001). Eight individuals participated in the study, six of whom were diagnosed with ADHD and two of whom were diagnosed with FASD. Participants ranged in age from 27 to 58 and included six females, one male, and one participant identified as non-binary. This study revealed three major themes: (1) "I struggled": Barriers in elementary, secondary and post-secondary schools; (2) "My diagnosis was missed": Diagnosis after secondary school; and (3) "I was successful": Accommodations and supports promoting resiliency. Even though each of the participants experienced barriers throughout education, they all were able to experience some level of success within their area of study in post-secondary. This study concludes with a discussion on the practical implications of the findings, the limitations and strengths of the study and areas recommended for future research.

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Lastly, I would like to thank the individuals who shared a part of their lives for this study. I am honored to share your experiences and forever grateful for your participation.

Dedication

This thesis is dedicated to the memory of my Grandma, Irene May Powell. Her endless love, support and encouragement meant everything to me, and I miss her every day.

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Chapter One: Introduction

I have always had a personal interest in Fetal Alcohol Spectrum Disorder (FASD). My mother was adopted as an infant and her adoptive parents were unaware of her birth mother's history with alcohol abuse. As a child, my mother struggled with developmental milestones and did not do well in school. My mother eventually dropped out of school in Grade 10 and moved out on her own at the age of 16. At 24, she had me and 17 months later my sister was born. Unable to raise two young children on her own, my mother decided to give one of us up for adoption. My sister was adopted to an amazing family and I was raised primarily by my mother and periodically by my grandparents. Parenting was difficult for her and at the age of 14 I moved in with my grandparents permanently. Throughout the remainder of my adolescence, my mother and I had a fractured relationship, sometimes going months without speaking to one another.

When my mother was in her 50's she was diagnosed with Alcohol Related Neurodevelopmental Disorder (ARND), now considered FASD without sentinel facial features. At this point in my life, I had already obtained my bachelor's degree in Psychology and was working with children with disabilities. Wanting to know more about my mother's diagnosis, I completed a Fetal Alcohol Spectrum Disorder Education Certificate through Lethbridge College. I was able to learn about the diagnosis, including how prenatal alcohol exposure may impact an individual throughout their lifespan and how to support individuals diagnosed with FASD. This knowledge helped to rebuild the fractured relationship with my mother and provided me with a deeper understanding of her diagnosis. Most importantly, I was able to share this knowledge with my mother, and together we learned about her strengths and her difficulties.

Attention Deficit Hyperactivity Disorder holds a special interest for me as well, as many of my family members and close friends have been diagnosed with ADHD. Many of them struggled in their educational endeavours, but all of them have succeeded in their field of study. It is through these experiences that I have gained a personal interest in contributing to, and expanding the research of, both FASD and ADHD as well as building a better understanding and optimism for those affected by the diagnosis.

There is currently limited research on the post-secondary experiences of individuals diagnosed with FASD, however there is a considerable amount of research on the post-secondary experiences of students diagnosed with ADHD. As both FASD and ADHD have similar behaviour/hyperactivity challenges it is my hope that this research can add to the limited research

of post-secondary students diagnosed with FASD. By finding similarities between these two groups this research may provide some insight into what supports, and accommodations are needed to promote success for individuals diagnosed with FASD.

Fetal Alcohol Spectrum Disorders

Fetal Alcohol Spectrum Disorder (FASD) is the result of prenatal alcohol consumption during pregnancy (Chudley et al., 2005). There are critical periods of growth throughout fetal development and because a pregnant woman may use alcohol at various times and in different amounts during each pregnancy, the damage to each individual fetus will be diverse (Ornoy & Ergaz, 2010). Dose, timing, conditions of exposure, and personal variations in each mother and fetus produce different disabilities in each child (Streissguth, 1997). Damage to the prenatal brain is permanent and irreversible, potentially causing physical defects, serious cognitive deficits and behaviour problems (Mattson, Schoenfeld, & Riley, 2001).

Prenatal alcohol exposure is the leading known cause of birth defects and developmental disabilities in Canada with estimates that 9 of every 1,000 babies are born with a FASD each year (Public Health Agency of Canada, 2008). It is estimated that 3,000 babies are born with a FASD every year and about 300,000 individuals are currently living with a FASD in Canada (Health Canada, 2018). These estimates are significantly greater in high-risk communities, such as Indigenous populations, rural areas, and isolated northern communities, where it is estimated that 1 in 5 babies are born with FASD (Health Canada, 2018; Knorr, 2011). Direct costs associated with FASD have been estimated at $1.5 million per person throughout their lifetime (Health Canada, 2018), including medical treatment, special education, family support, and other community support services; as well as indirect costs that can occur as a consequence of the disability, such as work force and correction services (Thanh, Jonsson, Dennett, & Jacobs, 2011).

As previously mentioned, the effects from prenatal alcohol exposure can vary depending on the dose, timing, and conditions of exposure, as well as personal variations between the mother and fetus; therefore, the range of effects can vary among individuals (Streissguth, 1997). These effects can be separated into two classifications: primary disabilities and secondary disabilities. Primary disabilities are those that the child is born with and are directly caused by prenatal alcohol exposure which may include: neurobehavioural functioning, which include inattention, hyperactivity, poor language performance; adaptive and social functioning, which include problems understanding social cues, indiscriminate social behaviour, and difficulty

communicating in social contexts; intellectual functioning; verbal and nonverbal learning and memory; and executive functioning, which includes planning, inhibition, working memory, organized search, flexible thinking and fluency (O'Connor et al., 2006; Rasmussen & Bisanz, 2008; Riley & McGee, 2005).

Secondary disabilities associated with FASD are not directly caused by prenatal alcohol exposure but may arise after birth and develop directly from primary disabilities (Brintnell, Bailey, Sawhney, & Kreftin, 2011). Secondary disabilities that individuals with FASD may experience include disrupted school experiences, alcohol and drug abuse, mental health problems (i.e. anxiety, depression, self-harm), inappropriate sexual behaviours, victimization, trouble with the law, unemployment, and homelessness (Brintnell, et al., 2011; Duquette & Orders, 2013). Research over the years has identified protective factors that may prevent or mitigate secondary disabilities in individuals with FASD including: early identification and diagnosis (preferably before the age of six); early intervention for developmental and primary disabilities; living in a stable and nurturing home environment; parental advocacy; not being victimized at an early age; and appropriate educational supports and programming (Brintnell, et al., 2011; Duquette, Stodel, Fullarton, & Hagglund, 2006; Duquette & Orders, 2013; Streissguth, 2007).

It has only been in the last ten years that research, primarily qualitative, has focused on the perspective of individuals who have been diagnosed with FASD. For example, Duquette and Stodel (2005) examined the educational experiences of individuals diagnosed with FASD from the perspective of the individual and their caregivers. They revealed protective factors, including early identification and diagnosis, parental support and advocacy, caring teachers, and appropriate programs and services. These protective factors played an important role in positive school experiences. In another study, Duquette et al. (2006) explored the persistence (i.e., continuing to persevere in post-secondary studies) in high school of individuals with FASD from their own perspective. They found that parental advocacy was the biggest determinant of persistence and success in high school. Recently, Knorr and McIntyre (2016) examined the school and life experiences of four individuals diagnosed with FASD to determine how they were successful from their own perspective. She was able to determine protective factors, most notably resilience in the face of adversity, which determined their success in school and life situations.

Duquette and Orders (2013) stated that "to date, there are no studies on adults with FASD who have engaged in courses after high school and their educational experiences" (p. 69). Therefore, they set out to examine the post-secondary educational experiences of individuals diagnosed with FASD. They determined that parental advocacy and tutoring were important factors for success; unfortunately, the barriers of the diagnosis, particularly the primary and secondary disabilities associated with FASD, prevented all but one of these individuals from achieving success in their post-secondary education experiences (Duquette & Orders, 2013). In order to determine what accommodations and supports are needed to help individuals with FASD achieve success in post-secondary, it is necessary that the experiences of those students are directly examined from their perspective. Also, by examining the post-secondary educational experiences of individuals diagnosed with FASD this study will be filling the gap of very limited research on this topic. A similarly challenged group of individuals at the post-secondary level are individuals with a diagnosis of Attention Deficit Hyperactivity Disorder.

Attention Deficit Hyperactivity Disorder

Attention Deficit Hyperactivity Disorder (ADHD) is a neurodevelopmental disorder defined by impairing levels of inattention, disorganization, and/or hyperactivity (DSM-V; American Psychiatric Association or APA, 2013). There are three subtypes of ADHD: (1) predominantly inattentive type, which exhibits symptoms such as wandering off task, lacking persistence, having difficulty sustaining focus, and being disorganized; (2) predominantly hyperactive/impulsive type; which refers to excessive motor activity (excessive fidgeting, tapping, talking) and impulsive behaviours or not thinking things through; and (3) combined type, which refers to a combination of inattention and hyperactivity/impulsivity is present (APA, 2013). It should also be noted that ADHD inattentive type is sometimes referred to as Attention Deficit Disorder (ADD).

ADHD begins in childhood, usually before the age of 12, and usually persists into adulthood (APA, 2013). ADHD occurs in approximately 5% of children and 2.5% of adults (APA, 2013). It is more frequent in males than females with a ratio of approximately 2:1 in children and 1.6:1 in adults (APA, 2013). Kopp et.al (2010) determined that the majority of girls with ADHD went years with their symptoms going undetected or misdiagnosed. They suggested that boys' behaviours were more disruptive, whereas the girls reported more inattention difficulties which is more difficult to detect (Kopp, 2010).

Many studies have investigated elementary and secondary school-related difficulties associated with ADHD, including academic, behavioural, social/emotional challenges, and executive functioning challenges (Barkley, 1997; Efron et al., 2014; Jarrett, 2015; Sibley, Altszuler, Morrow, & Merrill, 2014). These areas will be discussed in more depth in the literature review in this document (see Chapter 2). In 2016, Wiener and Daniels conducted a qualitative study on the school experiences of 12 adolescent students with ADHD. They found that these students were "well aware of their behaviour and implications of their behaviour on academic performance and could describe their problems in detail and with considerable passion (Wiener & Daniels, 2016, p. 576). Weiner and Daniels (2016) concluded that these students, as well as their teachers, knew a great deal about their disorder and were able to benefit from evidence-based interventions.

Unlike FASD research, there has been a considerable amount of qualitative research on the post-secondary experiences of individuals with ADHD. Many of these studies have examined specific areas of difficulty, including inattention (Weyandt et al., 2011); medication usage and study habits on academic achievement (Advokat, Lane, & Luo, 2011); time estimation abilities (Prevatt, Proctor, Baker, Garrett, & Yelland); test-taking skills (Lewandowski, Gathje, Lovett, & Gordon, 2013); as well as social and executive functioning abilities (Weyandt et al., 2013; Weyandt, Oster, Gudmundsdottir, & DuPaul, 2017). These studies suggested that post-secondary students with ADHD were more likely to: have significant differences with inattention; withdraw from significantly more classes and have a more difficult time planning and completing assignments; have greater time estimation difficulties; be more anxious during and after tests; and demonstrate poorer executive functions, organizational skills, and social adjustment than those individuals without ADHD (Advokat et al., 2011; Lewandowski et al., 2013; Prevatt et al., 2011; Weyandt et al., 2011; and Weyandt et al., 2013). Both FASD and ADHD have similar behaviour/hyperactivity challenges. Therefore, by linking the existing literature of the educational experiences of students diagnosed with ADHD to the limited research of post-secondary students diagnosed with FASD this study may find similarities that can provide some insight into what supports, and accommodations are needed to promote success for individuals diagnosed with FASD.

Purpose and Research Questions

It is important to further explore the post-secondary experiences of both students with ADHD and students with FASD. First, further research is needed to better understand the protective factors that contribute to success in post-secondary education for individuals diagnosed with FASD. To create success, we must first determine what factors generate success. Currently, there is limited research available on the school experiences of those with FASD (e.g., Knorr & McIntyre, 2016; Duquette & Orders, 2013; Duquette et al., 2006) and there is no known body of research that has focused on the positive perspectives of post-secondary students diagnosed with FASD. However, there are numerous studies on the post-secondary experiences of students diagnosed with ADHD (Advokat et al., 2011; Lewandowski et al., 2013; Prevatt et al., 2011; Weyandt et al., 2011; and Weyandt et al., 2013). Similar behaviour/hyperactivity challenges typically observed in individuals with FASD and ADHD need to be further researched to not only: (1) consider if similarities exist to potentially improve supports and accommodations needed to promote success for students with FASD, but also (2) consider if the existing research of the educational experiences of students with ADHD can help to inform best practices for students with FASD to address the limited research of post-secondary students with FASD. Therefore, the purpose of this study was to bridge the gap in research by describing the post-secondary experiences of individuals diagnosed with FASD or ADHD and determine the protective factors that have fostered success and the barriers or challenges they have faced, in hopes of creating a better understanding of how success is achieved in these individuals. Specifically, the following research question was posed:

(1) What are the school experiences of post-secondary students diagnosed with Fetal Alcohol Spectrum Disorder and Attention Deficit Hyperactivity Disorder?
   (a) What strategies/interventions/supports have allowed these students to achieve success in post-secondary education?

Definitions of Terms

Fetal Alcohol Spectrum Disorders

The Centres for Disease Control and Protection (2020) in the United States stated:

> Fetal alcohol spectrum disorders (FASDs) are a group of conditions that can occur in a person whose mother drank alcohol during pregnancy. These effects can include physical

> problems and problems with behaviour and learning. Often, a person with an FASD has a mix of these problems. (para. 1)

This group of conditions includes: FASD with sentinel facial features, FASD without sentinel facial features, at risk for neurodevelopmental disorder and FASD (see Table 1). These have replaced older diagnostic terms including fetal alcohol syndrome, partial fetal alcohol syndrome, and alcohol-related neurodevelopmental disorder.

FASD with Sentinel Facial Features. FASD with sentinel facial features requires simultaneous presentation of the three sentinel facial features (thin upper lip, short palpebral fissures, and smooth/flattened philtrum); AND prenatal alcohol exposure confirmed or unknown; AND evidence of impairment in three or more of the identified neurodevelopmental domains (motor skills, neuroanatomical/neurophysiology, cognition, language, academic achievement, memory, attention, executive functioning including impulse control, affect regulation, adaptive behaviour), or in infants and young children, evidence of microcephaly (Cook et al., 2015). FASD with sentinel features includes former diagnoses: Fetal Alcohol Syndrome (FAS) and partial Fetal Alcohol Syndrome (pFAS; FASD Network, 2018).

FASD Without Sentinel Facial Features. FASD without sentinel facial features requires evidence of impairment in three or more of the identified neurodevelopmental domains (motor skills, neuroanatomical/neurophysiology, cognition, language, academic achievement, memory, attention, executive functioning including impulse control, affect regulation, adaptive behaviour), AND confirmation of prenatal alcohol exposure, with the estimated dose at level known to be associated with neurodevelopmental effects (Cook et al., 2005). FASD without sentinel facial features includes former diagnosis of Alcohol Related Neurodevelopmental Disorder (ARND; FASD Network, 2018).

At Risk For Neurodevelopmental Disorder and FASD. At risk for neurodevelopmental disorder is not a diagnosis, but rather a designation for individuals when there is a confirmation of prenatal alcohol exposure, with the estimated dose at a level known to be associated with neurodevelopmental effects (Cook et al., 2005); criteria for FASD diagnosis is not met; and/or "there is some indication of a neurodevelopmental disorder in combination with a plausible explanation as to why the neurodevelopmental assessment results failed to meet the criteria for substantial impairment" (Cook et al., 2005, p. 4). Cook et al. (2005) also stated that the designation may also be given to individuals with all three sentinel facial features, but do not

possess the requisite three or more neurodevelopmental domain criteria or microcephaly, or when prenatal alcohol exposure confirmation is absent.

Fetal Alcohol Syndrome. Fetal Alcohol Syndrome (FAS), which is now labelled FASD with sentinel features, required three specific criteria for diagnosis: specific facial features (i.e. smooth or flat philtrum), growth delays (i.e. significantly low height or weight), and central nervous system dysfunction (Chudley, et al., 2005; Knorr & McIntyre, 2016). FAS could be diagnosed with or without confirmed maternal alcohol exposure, meaning the birth mother did not have to disclose whether she consumed alcohol during her pregnancy (Chudley, et al., 2005).

Partial Fetal Alcohol Syndrome. Partial Fetal Alcohol Syndrome (pFAS), which is now labelled FASD with sentinel features, involved central nervous system dysfunction but without the physical features (i.e. growth delay or facial features) that were present in FAS (Chudley et al., 2005). To be diagnosed with pFAS maternal alcohol consumption would have to have been confirmed, either through maternal disclosure or medical documentation (Chudley, et al., 2005).

Alcohol-Related Neurodevelopmental Disorder. Alcohol-Related Neurodevelopmental Disorder (ARND), which is now labelled FASD without sentinel features, involved central nervous system dysfunction with the absence of the physical features (i.e. growth delay or facial features, Chudley, et al., 2005). These central nervous system dysfunctions could have included deficits in memory, executive functions, attention, and sensory processing (Malbin, 2002; Streissguth, 1996). To be diagnosed with ARND maternal alcohol consumption would have to be confirmed (Stratton, Howe, & Battaglia, 1996).

Table 1.1

Diagnostic Criteria

FASD with sentinel features (previously FAS & pFAS)	**FASD without sentinel features** (previously ARND)	**At risk for neurodevelopmental disorder and FASD** (not a diagnosis)
• Presentation of all three sentinel facial features • Prenatal alcohol exposure (confirmed or unknown) • Impairment in three or more neurological domains	• Impairment in three or more neurological domains • Confirmation of prenatal alcohol exposure, with the estimated dose at a level known to be associated with neurodevelopmental effects	• Confirmation of prenatal alcohol exposure, with the estimated dose at a level known to be associated with neurodevelopmental effects • Diagnostic criteria are not met • Some indication of neurodevelopmental disorder with a reasonable reason why diagnostic criteria as not met (IE. too young; incomplete assessment)

Note. Content summarized from Cook et al. (2015)

Attention Deficit Hyperactivity Disorder

Attention Deficit Hyperactivity Disorder (ADHD) is a neurodevelopmental disorder defined by impairing levels of inattention, disorganization, and/or hyperactivity (DSM-V; American Psychiatric Association [APA], 2013). There are three subtypes of ADHD: (1) predominantly inattentive type, which exhibits symptoms such as wandering off task, lacking persistence, having difficulty sustaining focus, and being disorganized; (2) predominantly hyperactive/impulsive type; which refers to excessive motor activity (excessive fidgeting, tapping, talking) and impulsive behaviours or not thinking things through; and (3) combined type, which refers to a combination of inattention and hyperactivity/impulsivity is present (APA, 2013). It should also be noted that ADHD inattentive type is sometimes referred to as Attention Deficit Disorder (ADD).

Post-Secondary Institutions

Post-secondary institutions can be defined as universities (e.g., University of Saskatchewan), colleges (e.g., federated colleges, affiliated colleges, regional colleges, career colleges), and schools (e.g., Saskatchewan Polytechnic, Aboriginal and Northern Education, etc.) in the province of Saskatchewan offering programs and training opportunities to individuals following secondary schooling (Government of Saskatchewan, n.d.).

Persistence

Berger and Lyon (2005) define persistence as "the desire and action of a student to stay within the system of higher education from beginning of year through degree completion" (p. 7).

Resiliency

Resiliency refers to a dynamic process encompassing positive adaptation within the context of significant adversity (Luthar, Cicchetti, & Becker, 2000; Masten, 2001). The theory of resilience suggests that some children, even those exposed to the most extreme and harsh conditions, can overcome adversity and have healthy outcomes in adulthood (Murray, 2003). Luthar et al. (2000) stated that two conditions are inherent when referring to resilience: (1) exposure to significant threat or severe adversity; and (2) the achievement of positive adaptation despite major setbacks.

Significance of the Study

This study is significant for many reasons. First, this research has the potential to provide educators and education administrators with a deeper understanding of what accommodations and supports are necessary for students with FASD or ADHD to promote positive experiences and successful completion in post-secondary. Second, it provides a better understanding of the experiences of individuals with FASD or ADHD. To date research has focused only on the association and comparison of ADHD and FASD (Greenbaum, Stevens, Nash, Koren, & Rovet, 2009; Someki, 2011; Young et al., 2016), and not on the resiliency factors, for both groups, within the same study. Third, there is limited research on the educational experiences of students diagnosed with FASD. Only one study to date has focused on the post-secondary experiences of students with FASD (Duquette & Orders, 2013). There is however a considerable amount of research on the post-secondary experiences of students with ADHD (e.g., Meaux, Green, & Broussard, 2009; Rabiner, Anastopoulous, Costello, Hoyle, & Swartzwelder, 2008; Sibley & Yeguez, 2018). By examining the suggested best accommodations and supports for post-secondary students with ADHD reported in the existing literature, this study set out to explore the effectiveness of these suggested practices with participants who reported experiencing with similar areas of difficulty. Also, by examining the post-secondary educational experiences of students diagnosed with FASD this study will be filling the gap of very limited research on this topic. This was achieved by looking at the persistence in post-secondary of individuals with FASD and ADHD, which have similar behaviour challenges. Understanding their positive

experiences may hopefully allow future students re-create that success in their post-secondary education.

Chapter Organization

A review of the literature related to Fetal Alcohol Spectrum Disorders and Attention Deficit Hyperactivity Disorder follows in Chapter 2. Chapter 3 describes the research methods and procedures that were employed in the current study. Chapter 4 presents the results of the study and the four major themes that were found. Finally, Chapter 5 discusses the integration of the findings to existing literature, practical implications of the findings, strengths and limitations of the study, and implications for future research.

Chapter Two: Literature Review

This review of the literature related to individuals diagnosed with FASD and ADHD and their experiences throughout their education is divided into four major sections. Section one discusses and critically reviews research related to FASD. Section two discusses and critically reviews literature related to ADHD. Section three discusses and critically reviews literature related to the post-secondary experiences of students with exceptionalities. Section four discusses and critically reviews literature related to resiliency.

Fetal Alcohol Spectrum Disorder

Previous researchers have well documented the history of Fetal Alcohol Spectrum Disorder (FASD). Jones and Smith (1973) suggested that one of the earliest references to prenatal alcohol consumption dates back to Greek and Roman mythology, where it was customary for bridal couples to forego the consumption of alcohol on their wedding night. It was their belief that alcohol consumption at the time of procreation would lead to birth defects of their unborn child (Jones & Smith, 1973). However, Calhoun and Warren (2007) noted that the Greeks and Romans believed that consumption of alcohol at the time of conception would lead to birth defects rather than abstaining from alcohol throughout the pregnancy to prevent harming the fetus.

Sullivan (1899) observed that imprisoned pregnant women, who consumed alcohol during pregnancy, had a higher rate of miscarriage, and babies born with distinctive patterns of birth defects, concluding that alcohol had a direct effect on the developing fetus. Similarly, in 1968 a group of French researchers described high rates of miscarriages, stillbirths, and premature births in mothers who consumed alcohol prenatally (Lemoine, Harousseau, Borteyru, & Menuet, 1968). They also observed that children who did survive experienced growth delays and physical deformities (Lemoine, et al. 1968).

Fetal Alcohol Syndrome research remained dormant for another five years, until Jones and Smith (1973) published a series of case studies that illustrated consistent patterns of physical and developmental defects associated with prenatal alcohol consumption. Jones and Smith (1973) labelled these defects as Fetal Alcohol Syndrome and created criteria for diagnoses, which had been overlooked in previous research.

Diagnostic Criteria

Jones and Smith (1978) were the first to describe the early diagnostic guidelines for Fetal Alcohol Syndrome and provided images of children with confirmed prenatal alcohol exposure to visually illustrate the physical defects from different ethnicities (Green, 2008). Clarren and Smith (1978) were also researching the effects that prenatal alcohol consumption had on the developing fetus. They established four different categories of indicators related to prenatal alcohol exposure: central nervous system damage, significant growth delays, facial defects, and other significant defects (Clarren and Smith, 1978). For a diagnosis to be given, individuals had to have three of the four categories. Those individuals that had two of the four diagnostic criteria were identified as having suspected fetal alcohol effects (FAE; Clarren and Smith, 1978).

Currently, there are numerous diagnostic guidelines available throughout the world, including, but not limited to, the following: the four-digit FASD Diagnostic Code (Astley & Clarren, 2000); Guidelines for Referral and Diagnosis (Bertrand, Floyd, & Weber, 2005); the revised Institute of Medicine (IOM) FASD guidelines (Hoyme et al., 2005); and the Canadian guidelines for FASD diagnosis (Chudley, et al., 2005). The Canadian guidelines for FASD diagnosis presented by Chudley et al. (2005) will be described in more detail, as it is currently being used for diagnostic purposes in Canada.

Chudley et al. (2005) stated that "a subcommittee of the Public Health Agency of Canada's National Advisory Committee on Fetal Alcohol Spectrum Disorder, reviewed, analyzed, and integrated current approaches to diagnosis to reach agreement on a standard in Canada" (p. S1). They used a combination of the four-digit FASD diagnostic code and the revised IOM guidelines to develop the Canadian guidelines for FASD diagnosis (Chudley et al., 2005). Chudley et al. (2005) combined the four-digit diagnostic code to describe, assess, and measure alcohol exposure relative to growth delays, facial features, and central nervous system dysfunction; as well as the revised diagnostic categories from the IOM: FAS with and without a confirmed history of alcohol exposure, partial FAS, and alcohol related neurodevelopmental disorder (ARND) to construct the Canadian guidelines for FASD diagnosis. Chudley et al. (2005) eliminated the revised IOM's diagnosis of Alcohol Related Birth Defects (ARBD), and forewarned diagnosticians that the diagnostic label should be used with caution due to its limited diagnostic utility (Chudley et al., 2005). Chudley et al. (2005) defined the diagnostic criteria for three diagnostic categories that are present within the umbrella term: Fetal Alcohol Syndrome

(FAS), Partial Fetal Alcohol Syndrome (pFAS), and Alcohol-Related Neurodevelopmental Disorder (ARND).

In September 2012 a 14-member steering committee was formed and the guidelines for FASD diagnoses were updated. Fetal Alcohol Spectrum Disorder, which was once an umbrella term to describe a wide range of effects caused by prenatal alcohol consumption (Chudley, et al., 2005), is now a diagnostic term that describes the "constellation of effects that result from prenatal alcohol exposure (Cook et al., 2005, p. 1). Diagnostic criteria were changed to include: FASD with sentinel facial features (formally Fetal Alcohol Syndrome and partial Fetal Alcohol Syndrome) and FASD without sentinel facial features (formally Alcohol Related Neurodevelopmental Disorder; Cook et al., 2005). Cook et al. (2005) also developed the 'At risk for neurodevelopmental disorder and FASD designation' for those who did not currently fit criteria for either diagnosis.

FASD with Sentinel Facial Features. FASD with sentinel facial features requires simultaneous presentation of the three sentinel facial features (thin upper lip, short palpebral fissures, and smooth/flattened philtrum); AND prenatal alcohol exposure confirmed or unknown; AND evidence of impairment in three or more of the identified neurodevelopmental domains (motor skills, neuroanatomical/neurophysiology, cognition, language, academic achievement, memory, attention, executive functioning including impulse control, affect regulation, adaptive behaviour), or in infants and young children, evidence of microcephaly (Cook et al., 2015). FASD with sentinel features includes former diagnoses: Fetal Alcohol Syndrome (FAS) and partial Fetal Alcohol Syndrome (pFAS; FASD Network, 2018).

FASD without Sentinel Facial Features. FASD without sentinel facial features requires evidence of impairment in three or more of the identified neurodevelopmental domains (motor skills, neuroanatomical/neurophysiology, cognition, language, academic achievement, memory, attention, executive functioning including impulse control, affect regulation, adaptive behaviour), AND confirmation of prenatal alcohol exposure, with the estimated dose at level known to be associated with neurodevelopmental effects (Cook et al., 2005). FASD without sentinel facial features includes former diagnosis of Alcohol Related Neurodevelopmental Disorder (ARND; FASD Network, 2018).

At Risk for Neurodevelopmental Disorder and FASD. At risk for neurodevelopmental disorder is not a diagnosis, but rather a designation for individuals when there is a confirmation

of prenatal alcohol exposure, with the estimated dose at a level known to be associated with neurodevelopmental effects (Cook et al., 2005); criteria for FASD diagnosis' are not met; and/or "there is some indication of a neurodevelopmental disorder in combination with a plausible explanation as to why the neurodevelopmental assessment results failed to meet the criteria for substantial impairment" (Cook et al., 2005, p. 4). Cook et al. (2005) also state that the designation may also be given to individuals with all three sentinel facial features, but do not possess the requisite three or more neurodevelopmental domain criteria or microcephaly, or when prenatal alcohol exposure confirmation is absent.

Behavioural and Neuropsychological Challenges

Neurological damage caused by prenatal alcohol exposure is permanent and irreversible (Mattson, Schoenfeld, & Riley, 2001). The greater the prenatal alcohol exposure the greater neurological damage and the more likely physical and structural abnormalities of the brain will occur (Vorhees & Mollnow, 1987). Children who have experienced prenatal alcohol exposure may experience differing neurological damage depending on the amount and/or frequency of alcohol that is consumed, and the timing or 'stage' of the fetal development (Niccols, 2007). Other factors that can affect the outcome can include: genetics of the mother and the fetus, the overall health of the mother, age of the mother, nutritional factors, as well as various social, economic, physical and environmental factors (Knorr, 2011; Niccols, 2007; Riley & McGee, 2005). These factors highlight the complexity of these disorders and account for the various combinations of physical, mental, behavioural, and learning/educational problems among individual with FASD (Nugyen, et al., 2011).

Primary disabilities are those that the individual is born with and are direct result from the neurological damage caused by prenatal alcohol exposure (Government of Canada, 2018; Knorr, 2011). Primary disabilities may present as deficits in: neurobehavioural functioning, which include inattention, hyperactivity, poor language performance; adaptive and social functioning, which include problems understanding social cues, indiscriminant social behaviour, and difficulty communicating in social contexts; intellectual functioning; memory impairment; language and communication deficits, and executive functioning, such as planning, inhibition, working memory, organized search, flexible thinking (O'Connor et al., 2006; Rasmussen & Bisanz, 2009; Riley & McGee, 2005).

Secondary disabilities are those that develop after birth and develop with the absence of appropriate support and interventions (Chudley et al. 2007). Secondary disabilities are not directly caused by prenatal alcohol exposure but may arise after birth and develop directly from primary disabilities (Brintnell, et al., 2011). Secondary disabilities include: disrupted school experiences, alcohol and drug abuse, mental health problems (i.e. anxiety depression, self-harm), inappropriate sexual behaviours, victimization, trouble with the law, unemployment, and homelessness (Brintnell, et al., 2011; Duquette & Orders, 2013; Schonfeld, Mattson, & Riley, 2005; Streissguth et al. 2004).

Secondary disabilities may be mitigated with the protective factors. Research over the years has identified numerous protective factors that may help to prevent secondary disabilities, including: early identification and diagnosis (preferably before the age of six); early intervention for developmental and primary disabilities; living in a stable and nurturing home environment; parental advocacy; not being victimized at an early age; and appropriate educational supports and programming (Brintnell, et al., 2011; Duquette, et al., 2006; Duquette & Orders, 2013).

Behavioural and Adaptive Behavioural Issues. Behaviour impairments are well documented in children with FASD and include impairments in attention, disruptive behaviour and conduct disorders, academic performance, and social judgement (Tsang et al. 2016). Children with prenatal alcohol exposure have higher rates of attention-deficit/hyperactivity disorder (ADHD; Riley & McGee, 2005; Doyle & Mattson, 2015). Burd, Klug, Martsolf, and Kerbeshian (2003) established that comorbid attention deficit hyperactivity disorder occurred in 73% of cases with FAS, 72% of cases with partial FAS or ARND, and 36% of individuals who did not meet diagnostic criteria for either. In another study, Bhatara, Loudenberg, and Ellis (2006) explored the association between the occurrence of ADHD and prenatal alcohol exposure. Results of this study revealed that 41% of individuals with prenatal alcohol exposure were also diagnosed with ADHD (Bhatara, et al., 2006). Individuals with FASD have also been shown to display other behaviour impairments, such as impulsivity, negative affect, irritability, dishonesty, behavioural outbursts, intentional destruction of property, physical aggression and self-injury (Rasmussen, Andrew, Zwaigenbaum, & Tough, 2008; Doyle & Mattson, 2015). Other studies have focused on secondary factors related to behaviour including psychiatric diagnosis, trouble with the law, alcohol and drug use, inappropriate sexual behaviours, and other maladaptive behaviours (Schonfeld, Mattson, & Riley, 2005; Streissguth et al. 2004).

Adaptive behaviours are those personal and social skills that are needed to live independently (Rasmussen et al., 2008). Mattson and Riley (2000) revealed that children with reported alcohol exposure had significant difficulties in social, attention, and aggressive domains, based on parent ratings of the child's behaviour. These deficits to adaptive and social behaviours can interfere with home, school and social environments and are more likely to generate hyperactive disruptive, impulsive, or delinquent behaviour (Knorr, 2011; Riley & McGee, 2005). Individuals with prenatal alcohol exposure may display social deficits, such as, being overly friendly with strangers, problems understanding social consequences, difficulties reading social cues, indiscriminant social behaviour, and difficulty communicating in social contexts (Doyle & Mattson, 2015; O'Connor, et al., 2006). Thomas, Kelly, Mattson, and Riley (1998) compared the social abilities of children with Fetal Alcohol Syndrome to children with similar intelligence quotients (IQ) and a normative control group. The results revealed that children with prenatal alcohol exposure have more social skill deficits than non-exposed children, beyond what can be explained by low IQ scores (Thomas et al., 1998). More recently, Rasmussen, Becker, McLennan, Urichuk, and Andrew (2011) examined social deficits among children with and without prenatal alcohol exposure. Compared to the children without prenatal alcohol exposure, those with prenatal alcohol exposure showed "more deficits on caregiver ratings of responsibility, hyperactivity, internalizing problems and overall social skills, as well as respite worker ratings of hyperactivity" (Rasmussen et al., 2011, pg. 711). Other research suggests that these social deficits persist across an individual's lifetime and may become worse with age (Kully-Martens, Denys, Treit, Tamana, & Rasmussen, 2012).

Intellectual Performance. The intelligence quotient a number representing a person's reasoning ability (measured using problem-solving tests) as compared to the statistical norm or average for their age, taken as 100 (Dictionary.com, n.d.). The IQ of individuals prenatally exposed to alcohol has been well documented in research (Abkarian, 1991; Coles, Brown, Smith, Platzman, Erikson, & Falek, 1991; Mattson, Riley, Gramling, Delis, & Jones, 1998; Niccols, 2007; Olson, Feldman, Streissguth, Sampson, & Bookstein, 1998). Research has shown that individuals prenatally exposed to alcohol show a wide variation in IQ scores that can range from severely intellectually disabled to normal intelligence (Abkarian, 1991; Knorr, 2011). Howell, Lynch, Platzman, Smith, and Coles (2006) examined the IQ of 265 low socioeconomic status (SES) adolescents: 128 prenatally exposed to alcohol, 53 controls, and 84 special education

students. Results revealed that individuals prenatally exposed to alcohol had significantly lower IQ scores than the control, and special education groups (Howell et al., 2006). Chasnoff, Wells, Telford, Schmidt, and Messer (2010) compared the general intelligence among children with FAS, pFAS, and ARND and established that "children with FAS exhibited the most impaired level of general intelligence as documented on the Wechsler Intelligence Scale for Children-third edition" (p. 198). Results of this study also revealed that children with pFAS and ARND had similar intelligence scores (Chasnoff et al., 2010). In another study, Boseck, Davis, Cassady, Finch, and Gelder (2015) compared cognitive profiles of 81 children with comorbid FASD and ADHD to 147 children with ADHD. Results indicated that children with FASD/ADHD exhibit significantly lower IQ's than those children with ADHD alone (Boseck et al., 2015).

Learning and Memory. Research on learning and memory has revealed academic deficits in math and reading and spelling; verbal and nonverbal learning; as well as short-term and long-term memory (Howell et al., 2006; Mattson & Riley, 1998; Mattson, Riley, Delis, Stern, & Jones, 1996; Mattson & Roebuck, 2006; Olson, Sampson, Barr, Streissguth, & Bookstein, 1992; Rasmussen & Bisanz, 2011; Riley & McGee, 2005; Willford, Richardson, Leech, & Day, 2004). A more recent study examined individuals affected by prenatal alcohol exposure and their ability to learn verbal information through recall of related lists and unrelated lists (Roebuck-Spencer & Mattson, 2004). Results of this study demonstrated that individuals affected by prenatal alcohol exposure did better with grouped, related words, suggesting that they may benefit from implicit learning strategies (Roebuck-Spencer & Mattson, 2004). In another study, Howell et al. (2006) determined that individuals prenatally exposed to alcohol had significant deficits on math subtests of the Wechsler Individual Achievement Test (WIAT) but performed better in the reading and spelling subtests than the special education group they were being compared to.

Doyle and Mattson (2015) suggest that "memory impairment may manifest as problems remembering information learned previously, trouble remembering lengthy verbal instructions, or repeatedly making the same mistakes" (p. 178). Mattson, Riley, Delis, Stern, and Jones (1996) administered a word list learning task that assessed immediate and delayed recall and recognition memory, to children diagnosed with FAS and a matched control group. The children with FAS had difficulty learning and recalling the words after a delay period and made more errors than the matched control group (Mattson et al., 1996). The children with FAS also had difficulty

discriminating target words from distracter words and made more false-positive errors on the recognition tasks (Mattson et al., 1996). In another study, Mattson and Riley (1998) revealed that children with prenatal alcohol exposure displayed impaired explicit memory, however their implicit memory remined intact. This study suggested that children with prenatal alcohol exposure also display impaired free recall, but intact recognition memory (Mattson & Riley, 1998). In a more recent study, Coles, Lynch, Kable, Johnson, and Goldstein (2010) studied 235 young adults: 47 displayed the physical effects of prenatal alcohol exposure (dysmorphic group); 74 experienced prenatal alcohol exposure, but did not display any physical effects (non-dysmorphic group); 54 special education students; and 59 controls matched for ethnicity, socioeconomic status and hospital of birth. Results indicated that the dysmorphic group performed significantly worse on memory tests when compared to the control group but did not differ from the special education group (Coles et al., 2010). The study also revealed that the non-dysmorphic group had varied results, suggesting that prenatal alcohol exposure can cause a range of effects (Coles et al., 2010). Coles et al. (2010) suggested that learning, rather than forgetting, accounted for these memory deficits.

Language and Communication. Research on the effects of prenatal alcohol exposure has revealed language and communication deficits, including word comprehension, articulation, grammatical and semantic abilities, pragmatics, phonological processing deficits, and impairment in both expressive and receptive language (Abkarian, 1992; Becker, Warr-Leeper, & Leeper, 1990; Carney & Chemak, 1991; Church & Kaltenbach, 1997; Conroy, 1990; McGee, Bjorkquist, Riley, & Mattson, 2009; Mattson, et al., 1998). However, some research has shown little to no language and communication impairment (Fried, O'Connell, & Watkinson, 1992; Greene, Ernhart, Martier, Sokol, Ager, 1991; O'Leary, Zubrick, Taylor, Dixon, & Bower, 2009). Mattson, et al., (2011) suggested that language deficits may be more common in children with heavy prenatal alcohol exposure and the discrepancies in research may be due to varying amounts and timing of alcohol exposure.

In a more recent study, Pulsifer, Butz, O'Reilly, and Belcher (2008) compared the expressive language skills of children exposed to prenatal alcohol exposure to a control group of children not exposed to alcohol prenatally. The researchers found that the prenatally exposed group scored significantly lower than the control group, with 60% of alcohol exposed children achieving a standard score of less than 85, compared to 33% of children who were not exposed.

In another study, Chasnoff, Wells, Telford, Schmidt, and Messer (2010) compared neurodevelopmental functioning among children with FAS, pFAS, and ARND. Children with FAS have significantly worse language-based memory when compared with children with ARND and significantly poorer functional communication skills than children with pFAS.

Executive Functioning. Zelazo and Muller (2002) described executive functions as higher-order cognitive processes involved in thought and action under conscious control. The areas of the brain that control executive functions, such as planning, inhibition, working memory, set shifting and set maintenance, flexible thinking, strategy use, fluency and behaviour regulation (Rasmussen et al. 2008). Research has demonstrated that children with prenatal alcohol exposure have deficits in numerous areas of executive functioning, such as deficits in conceptual set shifting, concept formation, rapid generation of verbal and nonverbal response, inhibitory control, abstraction, problem solving and planning (Mattson, Goodman, Caine, Delis, & Riley, 1999; Mattson, Roesch, Glass, Deweese, Coles, Kable, et al., 2014; McGee, Schonfeld, & Roebuck-Spencer, 2008; Nguyen, Glass, Coles, Kable, May, Kalberg, et al., 2014; Vaurio, Riley, & Mattson, 2008). Rasmussen, McAuley, and Andrew (2007) used the Behaviour Rating Inventory of Executive Functioning (BREIF) to evaluate children with prenatal alcohol exposure. They determined that these children had scores in the clinical range on all subscales, with the greatest difficulty on the inhibitory control, working memory, and problem-solving subscales Rasmussen et al., 2007). A limitation to the study was that it did not include a control group, therefore, it is difficult to determine whether the results were significant (Mattson et al., 2011). However, in a more recent study, these effects were replicated and included a control group, revealing that children with prenatal alcohol exposure demonstrate lower executive functioning than typically developing controls for all subscales (McGee, Fryer, Bjorkquist, Mattson, & Riley, 2008). A similarly challenged group of individuals at the post-secondary level are individuals with a diagnosis of Attention Deficit Hyperactivity Disorder (ADHD).

Attention Deficit Hyperactivity Disorder

Attention Deficit Hyperactivity Disorder (ADHD) is a neurodevelopmental disorder defined by impairing levels of inattention, disorganization, and/or hyperactivity (DSM-V; American Psychiatric Association [APA], 2013). ADHD begins in childhood, usually before the age of 12, and usually persists into adulthood (APA, 2013). ADHD occurs in approximately 5% of children and 2.5% of adults (APA, 2013). Gillberg (2014) states that approximately half of ADHD

diagnoses are recognizable during the preschool years and that these cases are usually the most severe and persist throughout adolescence and into adulthood. Other research has suggested that slightly less than half of individuals diagnosed with ADHD will grow out of their diagnosis or learn to compensate for their difficulties to the extent they no longer meet criteria for an ADHD diagnosis (Gillberg, 2014; Jadidian, Hurley, & Taber, 2015; Kessler et al., 2010; Sarver, Rapport, Kofler, Raker, & Friedman, 2015; Wender 2011). ADHD is more frequent in males than females with a ratio of approximately 2:1 in children and 1.6:1 in adults (APA, 2013). "However, recent research has suggested that females may have been missed for a correct diagnosis of ADHD in childhood and instead, came to the attention of specialists only after entering adolescence" (Brandt, 2016, pg. 14). In fact, Kopp et.al (2010) determined that the majority of girls with ADHD went years with their symptoms going undetected or misdiagnosed. They suggested that boys' behaviours were more disruptive, whereas the girls reported more inattention difficulties which is more difficult to detect (Kopp, 2010).

Diagnostic Criteria

An ADHD diagnosis is facilitated by both an examination from a physician and an assessment from a psychologist (Brandt, 2016). The diagnostic process includes a developmental history interview, medical examination, neurological exam and may include questionnaires (e.g., Diagnostic Interview for Children and Adolescents [DICA: Reich, 2000], Behaviour Assessment System for Children, Second Edition [BASC-2; Reynolds & Kamphaus, 2006], Child Behaviour Checklist for Ages 6-18 [CBCL/6-18; Achenbach & Rescorla, 2001], Conners' Adult ADHD Diagnostic Interview for DSM-IV [Epstien, Johnson, & Conners, 2001]; Brandt, 2016).

The essential feature of ADHD is a "persistent pattern if inattention and/or hyperactivity-impulsivity that interferes with functioning or development to a degree that is inconsistent with normal development" (APA, 2013, p.59). There are three subtypes of ADHD: (1) predominantly inattentive presentation, which exhibits symptoms such as wandering off task, lacking persistence, having difficulty sustaining focus, and being disorganized; (2) predominantly hyperactive/impulsive presentation; which refers to excessive motor activity (excessive fidgeting, tapping, talking) and impulsive behaviours or not thinking things through; and (3) combined presentation, which refers to a combination of inattention and hyperactivity/impulsivity is present (APA, 2013). It should also be noted that ADHD inattentive type is sometimes referred to as Attention Deficit Disorder (ADD).

Inattentive Presentation. The DSM-V (APA, 2013) describes inattention behaviours as wandering off task, lacking persistence, difficulties sustaining focus, and disorganization. The diagnostic criteria for inattentive presentation includes: failing to give close attention to detail or makes careless mistakes; has difficulties sustaining attention; does not appear to be listening when spoken to directly; does not follow through with instructions; has difficulties organizing tasks and activities; avoids, dislikes, or is reluctant to engage in activities that require sustained mental effort; loses or misplaces important items; easily distracted by extraneous stimuli; and forgetful in daily activities (APA, 2013). The DSM-V requires that: A) six or more of these symptoms must be present and must have persisted for at least six months; B) symptoms must be present before the age of 12; C) the impairment must be present in two or more settings (i.e. home, school, or work); D) symptoms interfere with or reduce the quality of social, academic, or occupational functioning; and E) symptoms do not occur exclusively during course of other mental health conditions (APA, 2013).

Hyperactive/Impulsive Presentation. The DSM-V describes hyperactivity as excessive motor activity when it is not appropriate; excessive fidgeting, tapping, or talking, and extreme restlessness in adulthood (APA, 2013). Impulsivity refers to difficulties thinking of the consequences before acting and can manifest as social intrusiveness or making important decisions without considering the consequences (APA, 2013). The diagnostic criteria for hyperactive-impulsive presentation includes: fidgets or taps hands or squirms feet; leaves seat when it is expected they stay seated; running around or climbing in inappropriate settings; unable to play or engage in quiet activities; unable to or difficulties with sitting still for extended periods of time; excessive talking; blurting out answers before question is completed; difficulties waiting their turn; and often interrupts or intrudes on others (APA, 2013). The DSM-V requires that: A) six or more of these symptoms must be present and must have persisted for at least six months; B) symptoms must be present before the age of 12; C) the impairment must be present in two or more settings (i.e. home, school, or work); D) symptoms interfere with or reduce the quality of social, academic, or occupational functioning; and E) symptoms do not occur exclusively during course of other mental health conditions (APA, 2013).

Combined Presentation. If both criteria for inattentive presentation and hyperactive-impulsive presentation are present, a diagnosis of ADHD Combined Presentation is made. The DSM-V requires that: A) symptoms must be present and must have persisted for at least six

months; B) symptoms must be present before the age of 12; C) the impairment must be present in two or more settings (i.e., home, school, or work); D) symptoms interfere with or reduce the quality of social, academic, or occupational functioning; and E) symptoms do not occur exclusively during course of other mental health conditions (APA, 2013).

Academic and Neuropsychological Challenges

There has been a considerable amount of research on ADHD: including academic, behavioural, social/emotional challenges, and executive functioning challenges in elementary, high school and post-secondary education. The following is a sample of the current research that has been collected for the purpose of this study.

Academic Functioning. Students diagnosed with ADHD are at risk for poor academic achievement, failure, are more likely to receive special education in high school and are less likely than their non-ADHD peers to attend and complete [post-secondary] education (DuPaul, Weyandt, O'Dell, & Varejao, 2009; Murphy, Barkley, & Bush, 2002). Efron et al. (2014) conducted a study of 179 children who were diagnosed with ADHD and 212 non-ADHD children. The study revealed that children who were diagnosed with ADHD had poorer reading and mathematics performance than children who were not diagnosed with ADHD (Efron et al., 2014). Another study revealed that children and adolescents with ADHD exhibit clinically significant impairments with prevalence rates ranging from 50 to 80% (DuPaul & Langberg, 2015). In a more recent study Morsink et al. (2019) suggested that academic impairments in individuals with ADHD may be partly due to reduced motivation of academic tasks. Based on the results of this study individuals with ADHD had significantly lower grades and more reports of negative classroom experiences than the control group (Morsink et al., 2019). This study was also able to partially attribute lower academic grades to decreased motivation but using a questionnaire that rated motivational significance of task characteristics (Morsink et al., 2019).

There has been a many research studies on the comorbidity of ADHD and learning disabilities. DuPaul and Volpe (2009) indicated that approximately 27 to 31% of students with ADHD also have a learning disability. Another study from Mayes, Calhoun, and Crowell (2000) suggested that a learning disability is present in 70% of children diagnosed with ADHD: "with a learning disability in written expression two times more common (65%) than a learning disability in reading, math or spelling" (p. 417). Other research has focused on specific learning disabilities with ADHD, including handwriting performance, Dyslexia, math disabilities, and

Dysgraphia to name a few (Mayes, Frye, Breaux, & Calhoun, 2018; Germano, Gagliano, & Curatolo, 2010; Platt, 2017; Racine, Majnemer, Shevell, & Snider, 2008).

As mentioned previously, students with ADHD are less likely than their non-ADHD peers to attend and complete post-secondary education (DuPaul, Weyandt, O'Dell, & Varejao, 2009; Murphy, Barkley, & Bush, 2002). For example, Heiligenstein, Guenther, Levy, Savino, and Fulwiler (1999) found that college students with ADHD has lower grades, reported more academic problems and were more likely to be on academic probation than their non-ADHD peers. In another study, Advokat, Lane, and Luo (2011) revealed that college students with ADHD has significantly lower grades and withdrew from significantly more classes than the control group. Other studies have indicated that post-secondary students diagnosed with ADHD have greater problems with academic functioning including: struggling with timed tests, lack of test completion on time, longer duration to compete assignments, and perception of working harder to achieve good grades (Lewandowski, Lovett , Codding, & Gordon, 2008; Lewandowski, Gathje, Lovett, & Gordon, 2013; Prevatt, Proctor, Baker, Garrett, & Yelland, 2011).

Behaviour and Social Functioning. For children with ADHD exercising self-control can be a challenge as they struggle to comply with instructions and are often labelled as the 'problem child' and 'rule breaker' (Milich & Roberts, 2018). Miller (2020) suggested that the hyperactive and impulsive symptoms associated with ADHD leads to a lot of negative attention for children. She stated, "If you're being told from an early age that your behaviour is wrong or isn't what a kid is supposed to be doing, either you internalize it… or you react aggressively" (para. 7). Difficulties with impulsivity can also lead to poor social interactions and relationships (Brown, 2013; Jarrett 2016). Research has suggested that individuals with ADHD have impaired social functioning that starts in childhood and continues into adulthood (de Boo, & Prins, 2007; Huang-Pollock, Mikami, Pfiffner, & Burnett, 2009). A more recent study suggested that social difficulties may be due to inconsistency of social behaviours rather than the lack of social knowledge or skills (Aduen et al., 2018).

Weyandt et al. (2013) examined differences in psychological and social functioning between post-secondary students with ADHD and non-ADHD students. The study revealed that students with ADHD reported significantly higher levels of psychological distress than their non-ADHD peers (Weyandt et al., 2013). The study also suggested that students with ADHD were more likely to report significantly lower social adjustment to being a student but were not more

likely to report social difficulties that negatively impacted interactions with friends or family (Weyandt et al., 2013). This was in contrast to previous studies that showed post-secondary students with ADHD report difficulties with parents and peers, as well as lower overall levels of social skills and social adjustment (Grenwald-Mayes, 2002; Shaw-Zirt, Popali-Lehane, Chaplin, Bergman, 2005).

Executive Functioning. As previously mentioned, Zelazo and Muller (2002) described executive functions as higher-order cognitive processes involved in thought and action under conscious control. Executive functions are areas in the brain that control planning, inhibition, working memory, set shifting and set maintenance, flexible thinking, strategy use, fluency, and behaviour regulation (Rasmussen et al. 2008). Individuals with ADHD have deficits in executive functioning that contributes to poor recall, planning and anticipatory or preparatory behaviours (Barkley, 2015). Rodgers, Hwang, Toplak, Weiss, and Tannock (2011) investigated the role of inattention and working memory in predicting academic achievement. The findings suggest that deficits in working memory was related to lower academic achievement (Rodgers et al., 2011). A more recent study examined an alternative hypothesis that executive dysfunction may be partially due to impairments in automatic processing (Martino, Capri, Castriciano, Fabio, 2017). The study investigated the automatic processing of 12 children with ADHD, 17 with ADHD and a reading disability (RD), and 29 typically developing children (Martino et al., 2017). Results revealed that both the ADHD and ADHD-RD groups exhibited lower performance in automatic processing, suggesting that executive dysfunction may be partially due to impairments in automatic processing (Martino et al., 2017).

Previous research has generally indicated that students with ADHD have similar executive functions to there non-ADHD peers (DuPaul et al. 2009). However, more recent research suggests otherwise. Weyandt et al. (2013) "hypothesized that students with ADHD would report greater executive dysfunction and would demonstrate greater difficulty with tasks requiring executive functioning than [post-secondary] students without ADHD" (p. 427). The results showed that students with ADHD did show greater overall executive dysfunction that the control group (Weyandt et al., 2013). In another study, Jarrett (2016) found that inattention, hyperactivity/impulsivity and anxiety differed from the control group in relation to executive dysfunction, with executive dysfunction being strongly related to inattention followed by hyperactivity/impulsivity and anxiety. Other research has suggested that post-secondary students

with ADHD demonstrate poorer executive functioning than their non-ADHD peers (Dorr & Armstrong, 2019; Weyandt et al., 2017).

Comparing ADHD and FASD Behavioural Characteristics

In summary, individuals diagnosed with ADHD and individuals diagnosed with FASD have both common and varying characteristics or difficulties (e.g., behaviour characteristics). A comparison of these overlapping characteristics can more clearly summarize these similarities and differences (see Table 2).

Table 2.1

ADHD and FASD Characteristics/Difficulties

Characteristics	FASD	ADHD
Easily distracted by external stimuli	✓	✓
Often does not follow through with instructions	✓	✓
Often interrupts	✓	✓
Difficulties with cause and effect	✓	✓
Difficulties organizing tasks and activities	✓	✓
Difficulties with transitions	✓	
No impulse control, acts hyperactive	✓	✓
Problems with social interactions	✓	
Deficit in speech and language delays	✓	
Over- or under-responsive to stimuli	✓	✓
Poor problem solving	✓	✓
Difficulties initiating, following through	✓	✓
Difficulties with time management	✓	✓
Intellectual deficits	✓	
Learning Difficulties	✓	✓

Note. * FASD and ADHD are umbrella terms encompassing different diagnostic characteristics.Therefore, individuals with these diagnoses will demonstrate differing characteristics. Content adapted from (Bruer-Thompson, 2006).

In addition to better understanding how both FASD and ADHD are defined and diagnosed, it is also important to consider how individuals with exceptionalities such as these two conditions navigate and experience their post-secondary education.

Post-Secondary Educational Experiences of Students with Exceptionalities

Both FASD and ADHD have similar behaviour/hyperactivity challenges (APA, 2013; Chudley et al., 2005). By linking the existing literature of the educational experiences of students diagnosed with ADHD to the limited research of post-secondary students diagnosed with FASD this study may find similarities that can provide some insight into what supports and accommodations are needed to promote success for individuals diagnosed with FASD.

Transition from High School to Post-Secondary

Graduation from high school and continuing to post-secondary education is an important component to future success. Canadian census data reveals that post-secondary graduates "see their income increase more rapidly and consistently throughout their careers… experience fewer and shorter periods of unemployment, volunteer more, and are more engaged in their social and political activities" (The Association of Universities and Colleges of Canada, 2011, para. 5). However, students with disabilities are significantly less likely to graduate from high school, continue to post-secondary education, and graduate from post-secondary than their same-age peers (Brandt, 2016; Scanlon & Mellard, 2002). In 2005, the National Longitudinal Transition Study-2 (NLTS-2) revealed that approximately 3 in 10 students with disabilities had continued to post-secondary education after high school.

Individuals with disabilities have higher rates of high school drop out than that of their same aged peers. Bost and Riccomini (2006) suggested that students with disabilities are twice as likely to drop out of school than their peers, making it the most serious and pervasive problem facing students with disabilities. In addition, the probability of graduating from high school and continuing their education on to post-secondary is significantly less for a student with a disability (Scanlon & Mellard, 2002; Wolf, 2001). On the positive side, more and more Canadian students with disabilities are enrolling in post-secondary education. Erten (2011) reported that the percentage of students enrolling in post-secondary programs, who had a disclosed disability, increased from 0.25% in 1995 to 5.67% in 2003. However, Wolf (2001) stated that nearly 50% of students with disabilities will drop out of post-secondary education, compared to one-third of students without a disability. As a result, more students with a disability are enrolling in post-secondary programming, but nearly half are dropping out, failing out, or not completing their program.

Factors that increase retention of students with disabilities have been well researched both internally (within the student) and externally (within the program; Garrison-Wade, 2012; Getzel, 2008; Mamiseishvili, & Koch, 2010; O'Keefe, 2013; Reed, Kennett, & Emond, 2015). Mamiseishvili and Koch (2010) suggested that academic and social integration, as well as appropriate accommodations are significantly associated with retention of students with disabilities between their first and second year of their program. In another study, Garrison-Wade (2012) determined three major factors that determine retention in post-secondary education programs: self-determination skills, implementing formalized planning processes, and improving supports. Most recently, O'Keeffe (2013) suggested that students who develop a sense of belonging to the institution are more successful in post-secondary education.

Research involving post-secondary students diagnosed with FASD in post-secondary is largely unexplored. Only one research study to date has examined the post-secondary experiences of individuals diagnosed with FASD (Duquette & Orders, 2013). Duquette and Orders (2013) used a qualitative approach to examine the post-secondary experiences of adults with FASD. The research questions focused on the background characteristics of the student, how the students were academically and socially integrated into their post-secondary institution, and what facilitators and barriers were present that contributed to persistence (Duquette & Orders, 2013). Results suggested "that the background characteristic of having the primary disability of FASD could have serious negative effects on learning and the ability to make *positive* friendships" (Duquette & Orders, 2013, p. 76). They also determined that secondary disabilities associated with FASD also had a negative effect on persistence in post-secondary (Duquette & Orders, 2013). Duquette and Orders (2013) discovered that most of their participants were not socially integrated into their post-secondary institution and one participant was negatively socially integrated which compromised his persistence. In other words, "being vulnerable and having the wrong friends who influenced [the participant] in negative activities (e.g., drinking) was linked to them dropping out of school" (Duquette & Orders, 2013, p. 76). Lastly, Duquette and Orders (2013) determined that facilitators that promoted persistence included parental advocacy and parental assistance with their courses. They also suggested that academic abilities, preparation, goal-directedness, and the absence of mental illness were especially helpful for one of their participants to achieve academic success in post-secondary (Duquette & Orders, 2013). Barriers to persistence included, the primary and secondary

disabilities associated with the FASD diagnosis, as well as the difficulties achieving academic and social integration. Duquette and Orders (2013) also suggested that "the poor match between the participants' background characteristics and the demands of the chosen program" (p. 76) was also a barrier to persistence in post-secondary education. While this study was the first to examine the post-secondary experiences of students with FASD, more research is needed to provide further knowledge regarding factors that may facilitate post-secondary retention.

The transition from high school to post-secondary for individuals diagnosed with ADHD has been studied extensively. For example, Rabiner, Anastopoulous, Costello, Hoyle, and Swartzwelder (2008) examined the transition from high school to post-secondary for students diagnosed with ADHD. The results of this study demonstrated that students with ADHD experience greater academic concerns and depressive symptoms during the first semester of post-secondary than there non-ADHD peers (Rabiner et al. 2008). In another study, Meaux, Green and Broussard (2009) suggested that the "loss of parental supervision and structure, variable course schedules, and the freedom and distractions of campus life" (p. 248) could negatively affect the transition into post-secondary for students with ADHD. This qualitative study revealed three themes that could help, or hinder, their transition: gaining insight about ADHD, managing life and utilizing sources of support. In a more recent study, Sibley and Yeguez (2018) revealed that motivation and difficulties with self-control had the greatest impact for students with ADHD while transitioning from high school to post-secondary. The study also suggested a number of skills that would be helpful in the transition to post-secondary including organization, time management, test preparation, problem solving, self-awareness and self-control skills (Sibley & Yeguez, 2018).

Access to, and Experiences with Strategies and Supports

Access to services for students with disabilities are governed by the Canadian Charter of Rights and Freedoms (1982) and the Saskatchewan Human Rights Code (2015). The Canadian Charter of Rights and Freedoms was passed in 1982 along with the Canadian Constitution and encompasses all laws that both federal and provincial laws must support (Shah, 2010). The Canadian Charter of Rights and Freedoms (1982) guarantees that all individuals are seen as equal and has the right to equal protection without discrimination based on race, national or ethnic origin, color, religion, sex, age or mental or physical disability.

Canadian provincial provinces are given authority over education laws and legislation. The Saskatchewan Human Rights Code was initially passed in 1979 and has subsequently undergone many revisions with the most recent revision taking place in 2015 (Saskatchewan Human Rights Code, 2015). The Saskatchewan Human Rights Code (2015) stated that every person shall enjoy the right to education without discrimination based on prohibited grounds other than age. The Saskatchewan Human Rights Code (2015) also stated that access to educational programs and accommodations are required to reduce disadvantages that are suffered by, any group of individuals, including individuals with a disability.

The NLTS-2 (2005) revealed that 40% of students with disabilities, who had received academic support in high school, disclosed their disability to their post-secondary institution. To understand why this percentage is so low, research has focused on the perceptions of available academic accommodations and services available for post-secondary students with disabilities (Baker & Scanlon, 2016; Hadley, 2007; Lovett & Leja, 2013; Mullins & Preyde, 2013). Hadley (2007) expressed the importance of students with disabilities accessing academic accommodations and services for a successful transition from high school to post-secondary programming. However, students with disabilities were often critical of the level of accommodations that were available to them in post-secondary and often felt challenged to meet academic expectations without extra support (Hadley, 2007). Mullins and Preyde (2013) revealed that students with invisible disabilities were less likely to request accommodations "due to the lack of understanding and questions of validity that were assumed to be related to the lack of a physical manifestation of their disability" (p. 157).

To determine what factors affected whether a student with a disability would access accommodations and services in post-secondary, Barnard-Brak, Davis, Tate, and Sulak (2009) surveyed 156 students: 83 from a large public university and 73 from a small private university. Results indicated that two common variables influenced a student's decision to request accommodations: 1) post-secondary characteristics (students were more likely to access accommodations at smaller private universities compared to larger public universities); and 2) students' attitude towards accommodations (Barnard-Brak et al., 2009). In a more recent study, Herbert et al. (2014) revealed the following support services that should be offered to students with disabilities: admissions, academic counselling and support, disability related counselling,

assessment and evaluation, advocacy and liaison services, information and referral services, and data collection and program evaluation.

No current research has focused on services specifically for post-secondary students with FASD. Instead, research has mainly focused on invisible disabilities, such as learning disabilities and ADHD. Mytkowicz and Goss (2012) interviewed 14 undergraduate students with ADHD and/or a learning disability who were attending a private liberal arts college. These students credited their success in post-secondary to the mentoring relationships they developed with their professors in their program. In another study, D'Alessio and Banerjee (2016) tracked five students with ADHD while they participated in a student-centered developmental approach to academic advising over a 15-week period. This study revealed five components of academic advising that promoted success including: the advisor-advisee relationship, post-secondary readiness (i.e., readiness to accept transitional change), goal setting, action steps/implementation, and student accountability (D'Alessio and Banerjee, 2016). In a more recent study, DuPaul et al. (2017) examined the effect of support services, such as coaching (i.e. one-on-one sessions with the goal of enhancing academic functioning and self-determination) and tutoring (i.e. individual or small group focus on writing, organization, reading, note-taking, test preparation, or content-specific tutoring), on the academic grades of students with ADHD and/or a learning disability. Results of this study indicated that students with ADHD had the most academic gains as a result of the coaching support, whereas students with a learning disability had more significant academic gains with the tutoring support.

Summary Post-Secondary Educational Experiences

In summary, the post-secondary experiences of individuals diagnosed with ADHD have been more extensively researched (e,g., D'Alessio & Banerjee, 2016; Meaux, et al., 2009; Mytkowicz & Goss, 2012; Rabiner, et al., 2008; Sibley & Yeguez, 2018), while limited studies have considered the post-secondary experiences of individuals diagnosed with FASD (e.g., Duquette & Orders, 2013). A summary comparing these reported supportive post-secondary educational accommodations and services is given in Table 3.

Table 2.2

Reported Supportive Post-Secondary Educational Accommodations and Services

Reported Supportive Academic Accommodations and Services	FASD	ADHD
Mentoring Relationships (i.e., advisor-advisee relationship)		✓
Post-secondary readiness (i.e., readiness to accept transitional change)		✓
Time management		✓
Life management (i.e., being accountable, removing distractions, etc.)		✓
Coaching (i.e., enhancing academic functioning and self-determination)		✓
Tutoring (i.e., focused on writing, organization, reading, note-taking, test preparation, or content-spectific)	✓	
Parental advocacy	✓	
Test preparation		✓
Study skills (i.e., test taking and study strategies, etc.).		✓
Problem solving (i.e., multi-step planning, perspective taking, etc.)		✓
Learning about disorder (i.e., seeking information, learning from experiences, etc.)		✓
Utilizing available supports (i.e., parents, friends, teachers, etc.).		✓
Taking prescribed medications (i.e., stimulants, etc.).		✓

Note. Summary is based on the studies presented in this literature review of the post-secondary educational experiences of students with ADHD (D'Alessio & Banerjee, 2016; DuPaul et al. 2017; Meaux, et al., 2009; Mytkowicz & Goss, 2012; Rabiner, et al., 2008; Sibley & Yeguez, 2018) and FASD (Duquette & Orders, 2013).

To date, while research has focused on the association and comparison of ADHD and FASD (Greenbaum, Stevens, Nash, Koren, & Rovet, 2009; Someki, 2011; Young et al., 2016), currently no study has researched resiliency factors for both groups within the same study. Research indicates that children with prenatal alcohol exposure have higher rates of ADHD (Doyle & Mattson, 2015; Riley & McGee, 2005; Young, et al., 2016), therefore it may be important to research resiliency in both cohorts.

Theoretical Models and Students with Diverse Needs

Students with diverse social, emotional, and academic needs, such as individuals diagnosed with ADHD and FASD, may encounter barriers to learning (i.e., lack of educational supports such as limited access to educational psychologists or speech-language pathologists) in their educational environments (e.g., Duquette & Orders, 2013; Knorr & McIntyre, 2016). Resiliency refers to a dynamic process encompassing positive adaptation within the context of significant adversity (Luthar, Cicchetti, & Becker, 2000; Masten, 2001). The theory of resilience suggests that some children, even those exposed to the most extreme and harsh conditions, can overcome adversity and have healthy outcomes in adulthood (Murray, 2003). Luthar et al. (2000) stated that two conditions are inherent when referring to resilience: (1) exposure to significant threat or severe adversity; and (2) the achievement of positive adaptation despite major setbacks. Resiliency theory can be closely linked to Bronfenbrenner's Social Ecological Model, which is "based on the hypothesis that one's well-being is influenced by social context and the function and quality of relationships one has with others, such as family, neighbours and institutional systems" (Boon, Cottrell, King, Stevenson, & Millar, 2012, p. 389). The Social Ecological Model structures an individual's social context into five areas: (1) Microsystem – the environment that the individual participates directly (family, school, etc.); (2) Mesosystem – the members from different microsystems interacting with each other (connection between home and school or school and friends); (3) Exosystem – larger social systems, either individuals or organizations, that might be accessed by the individual (Boon et al., 2012; Bronfenbrenner, 1977); "(4) Macrosystem – the politics views and customs that represent the cultural fabric of society; and (5) Chronosystem – time as it relates to events in the individual's environment" (Boon et al., 2012, p. 10). Bronfenbrenner's model suggests that the success of an individual is determined, not just by the individual, but also by their interactions and experiences to their environment and social surroundings (Boon et al., 2012; Bronfenbrenner, 1977). This theoretical frame has been used in a literature review and a research study including students with FASD (Jamieson, 2017; Poth et al. 2014). For example, Jamieson (2017) used Bronfenbrenner's (1977) theoretical model to frame their findings related to assessing and diagnosing individuals across the lifespan (Jamieson, 2017). In addition, Poth et al (2014) used Bronfenbrenner's (1977) model to assist in analyzing the experiences and responses of students to classroom practices. However, educators need to consider how they can best support the social, emotional, and academic needs

of their students with diverse needs, such as students with ADHD and FASD, when they encounter difficulties or barriers since each student's individual needs (i.e., diagnoses, areas of strength and need, etc.) and the social and home environments in which they interact and live will vary (DuPaul, et al. 2017; Duquette & Orders, 2013; Sibley & Yeguez, 2018).

There are four key areas that can promote resilience (Murray, 2003). The first area is characteristics of the individual and can include: self-determination (i.e., being involved in making their own choices), positive temperament (i.e., positive adaptability, mood, etc.), internal locus of control (i.e., perceptions of success or failure), high self-esteem, positive outlook on the future, and moderate to high intelligence (Keogh & Weisner, 2993; Murray, 2003). Werner (1993) determined that positive temperament in the individual allows the child to engage the world on easier terms and elicit more positive responses from others. In another study, Condly (2006) suggested that individuals with a moderate to high intelligence are more likely to "understand what is happening to them, to distinguish between what is controllable what is not, to choose effective means of coping, and to select and modify more supportive environments" (p. 217). The second area is family factors and include: emotionally supportive and warm relationships with at least one parent/guardian, as well as effective parenting styles. Gribble (1993) found that parents of resilient children "had more positive parental attitudes, were more involved in their children's lives, and provided more and better guidance" (pp. 219- 220). The third area is school factors and can include: access to quality schools, feeling a sense of belonging (i.e., acceptance as a member or part of a classroom or social group, etc.; Hall, 2014), good peer relationships, and high school graduation and transition planning, the latter being especially important for individuals with a disability (Murray, 2003). The fourth area is community factors, such as social support from adults and involvement in prosocial organizations, such as sports teams and church groups (Murray, 2003). By using both Bronfenbrenner's Social Ecological Model and Resiliency theory, researchers can more clearly identify how an individual is being resilient, and the protective factors influencing them in all aspects of their lives, by considering factors that may have supported students to overcome the barriers they have encountered in post-secondary settings across each of the systems outline in Bronfenbrenner's framework (i.e., individual, family government/legal systems, etc.).

Research on resiliency in individuals with FASD have revealed distinct factors that contribute to success. Streissguth et al. (2004) suggested that early diagnosis and a stable and

nurturing family are important protective factors that facilitate success in individuals with FASD. In another study, Olson, Oti, Gelo, and Beck (2009) determined that a stable home environment, as well as parental advocacy, played an important role in success for individuals diagnosed with FASD. In a more recent study Knorr (2011), determined that help from knowledgeable and caring teachers, supportive caregivers/adults, and youth groups within the community contributed to success and increased resiliency in individuals with FASD.

Only one research study, to date, has been conducted on the experiences of post-secondary students diagnosed with FASD. Duquette and Orders (2013) examined post-secondary experiences of adults with FASD. Parental advocacy, positive social integration, and proper academic supports were three key factors that contributed to success in post-secondary education (Duquette & Orders, 2013). More research is needed to determine which protective factors contribute to success in post-secondary. Therefore, the aim of this study is to contribute to the limited research on the post-secondary experiences of students with FASD. Understanding which factors contribute to success can only increase the chances that more and more individuals with FASD can be successful in post-secondary education.

Research on resiliency in post-secondary students with ADHD has indicated several factors, both internally and externally that contribute to success in post-secondary. Internal factors, such as ability to compensate for difficulties and coping skills have been examined (DuPaul, et al. 2009; Glutting, Monaghan, Adams, & Sheslow, 2002). Brandt (2016) also revealed that individual characteristics, such as problem-solving skills, intelligence, mastery motivation and motivation to succeed also promoted success.

External factors, such as posting educational experiences, positive and knowledgeable teachers and support staff, and positive parent practices, and positive friendships also play a key factor in promoting success for students with ADHD (Becker, Fite, Luebbe, Stoppelbein, & Greening, 2013; DuPaul, Weyandt, & Janusis, 2011; Dvorsky, Langberg, Evans, & Becker, 2016; Sherman, Rasmussen, & Baydala, 2008). Sherman et al. (2008) suggested that teacher patience, knowledge of interventions and positive attitude towards students with ADHD were positively associated with academic success. In another study, DuPaul, Morgan, Farkas, Hillemeier, and Maczuga (2016) indicated that peer tutoring and one-on-one instruction also improved academic success for students with ADHD. Lastly, academic supports, such as accessing services and accommodations, and interventions, such as organization and study skills

training for students with ADHD were effective in promoting academic success (Bikic, Reichow, McCauley, Ibrahim, & Sukhodolsky, 2017; Brandt, 2016). Resiliency factors for both students with ADHD and students with FASD need to be considered within the same study since research until now has only considered the association and comparison of ADHD and FASD (Greenbaum, Stevens, Nash, Koren, & Rovet, 2009; Someki, 2011; Young et al., 2016. This study may be able to find some similarities between these two groups and consider if the existing literature of post-secondary students with ADHD can help to inform the best practices that could be a starting point for intervention when determining how best to support students with FASD. That is, it would be far more efficient use of time and resources to use existing research that has considered how their similar areas of need have been supported in post-secondary students with ADHD than waiting for research looking at post-secondary students with FASD to establish a base of evidence before attempting to intervene.

Summary

In 2005, Chudley and colleagues developed the Canadian guidelines for FASD diagnosis, creating the umbrella term Fetal Alcohol Spectrum Disorders which encompasses all diagnostic categories. Chudley et al. (2005) defined the diagnostic criteria for three diagnostic categories: Fetal Alcohol Syndrome (FAS), Partial Fetal Alcohol Syndrome (pFAS), and Alcohol-Related Neurodevelopmental Disorder (ARND). Recent research has focused on the neurological damage caused by prenatal alcohol consumption. The damage caused by prenatal alcohol exposure is permanent and irreversible (Mattson, Schoenfeld, & Riley, 2001) and can produce deficits in neurobehavioural functioning, which include inattention, hyperactivity, poor language performance; adaptive and social functioning, which include problems understanding social cues, indiscriminant social behaviour, and difficulty communicating in social contexts; intellectual functioning; verbal and nonverbal learning and memory; and executive functioning, which includes planning, inhibition, working memory, organized search, flexible thinking and fluency (Mattson, Schoenfeld, & Riley, 2001; O'Connor et al., 2006; Rasmussen & Bisanz, 2009; Riley & McGee, 2005). These deficits can affect all areas of an individual's day to day living, including educational experiences and success. A similarly challenged group of individuals at the post-secondary level are individuals with a diagnosis of Attention Deficit Hyperactivity Disorder.

Attention Deficit Hyperactivity Disorder (ADHD) is a neurodevelopmental disorder defined by impairing levels of inattention, disorganization, and/or hyperactivity (APA, 2013). The essential feature of ADHD is a "persistent pattern if inattention and/or hyperactivity-impulsivity that interferes with functioning or development to a degree that is inconsistent with normal development" (APA, 2013, p. 59). There are three subtypes of ADHD: (1) predominantly inattentive presentation, which exhibits symptoms such as wandering off task, lacking persistence, having difficulty sustaining focus, and being disorganized; (2) predominantly hyperactive/impulsive presentation; which refers to excessive motor activity (excessive fidgeting, tapping, talking) and impulsive behaviours or not thinking things through; and (3) combined presentation, which refers to a combination of inattention and hyperactivity/impulsivity is present (APA, 2013). Research on the academic, behavioural, social/emotional, and executive functioning challenges throughout student's education was examined.

Due to these deficits many individuals with FASD and ADHD have a difficult time completing high school and continuing their education on to post-secondary. Research on resiliency in post-secondary students with ADHD has indicated several factors, both internally and externally that contribute to success in post-secondary. Internal factors, such as ability to compensate for difficulties and coping skills have been examined, as well as individual characteristics, such as problem-solving skills, intelligence, mastery motivation and motivation to succeed also promoted success (Brandt, 2016; DuPaul, et al. 2009; Glutting et al. 2002). External factors, such as positive educational experiences, positive and knowledgeable teachers and support staff, and positive parent practices, and positive friendships also play a key factor in promoting success for students with ADHD (Becker, et al., 2013; DuPaul, et al., 2011; Dvorsky, et al., 2016; Sherman, et al., 2008). Lastly, academic supports, such as accessing services and accommodations, and interventions, such as organization and study skills training for students with ADHD were effective in promoting academic success (Bikic, et al. 2017; Brandt, 2016). Research involving post-secondary students diagnosed with FASD has been largely unexplored. To date, only one research study has examined the post-secondary experiences of individuals diagnosed with FASD (Duquette & Orders, 2013). This study, as well as many studies that preceded it, held grim outcomes for students with FASD (Duquette & Orders, 2013; Duquette et al., 2006), suggesting that it was "unlikely that individuals with FASD will ever develop the

critical individual attributes necessary for success" (Duquette et al., 2006, p. 229). While this study was the first to examine the post-secondary experiences of students with FASD, more research is needed to provide further knowledge regarding factors that may facilitate post-secondary success. Additionally, it is important to focus on the resiliency factors that these students have experienced throughout their lifetime. Understanding what protective factors have contributed to success in post-secondary education, and the barriers or challenges they have also encountered, can provide much information on how to duplicate this success in students who have been diagnosed with FASD. If the resiliency factors for both students with FASD and students with ADHD can be explored in the same study to consider if similarities exist, then it may be possible to consider if some of the existing literature on meeting the needs of post-secondary students of ADHD can be used to consider first steps when determining best practices for post-secondary students with FASD.

Chapter Three: Methodology

This chapter describes the research methods and procedures that were employed in the current study. Specifically, the rationale for basic interpretive qualitative research, as well as, participant selection, data generation, data analysis, and evaluation criteria are described.

Rationale for Qualitative Methodology

"Qualitative research is based on the belief that knowledge is constructed by people in an ongoing fashion as they engage in and make meaning of an activity, experience, or phenomenon" (Merriam, 2015, p. 23). The purpose of qualitative research is to understand how individuals make sense of their lives and experiences and the meaning behind these experiences (Merriam, 2015). Merriam (2015) identified four characteristics of qualitative research: (1) the researchers' goal is to understand the meaning that individuals have constructed about their world and their experiences; (2) the researcher is the primary instrument for data collection and data analysis; (3) the research process is inductive, meaning that the data is used to generate concepts, hypothesis, or theories rather than deductively deriving hypothesis to be tested; and (4) the product of qualitative inquiry is richly descriptive as data is collected through interviews, observations or document analysis.

The present study used basic qualitative research to describe the educational experiences of post-secondary students with FASD or ADHD. This study also used resiliency theory to look at the success of students with the expectation of understanding how academic success is achieved among these individuals. The research question that guided this inquiry was:

(1) What are the school experiences of post-secondary students diagnosed with Fetal Alcohol Spectrum Disorders and Attention Deficit Hyperactivity Disorder?

(a) What strategies/interventions/supports have allowed these students to achieve success in post-secondary education?

Basic Interpretive Qualitative Research

Merriam's (2015) basic interpretive qualitative approach was used to explore the post-secondary experiences of students diagnosed with FASD or ADHD. Merriam (2015) described basic interpretive qualitative research as learning how individuals experience and interact with their social world and the meaning that these experiences have for them. In this study, interviews and follow up conversations were used to clarify the information participants shared. The data was also interpreted using the resiliency theory framework, as a basic qualitative study is always

framed by a disciplinary-specific concept, model, or theory (Merriam, 2015). The goal of this study was to understand how students are making sense of their educational experiences and how they are interpreting their educational success.

Participant Selection and Recruitment

Upon initial University of Saskatchewan Ethics Board approval (Beh ID# 824) on June 12, 2019 purposeful sampling was undertaken to recruit students diagnosed with FASD who were currently enrolled in a post-secondary program. The specific inclusionary criteria included: (1) be currently enrolled in a post-secondary program; (2) be formally diagnosed with FAS, pFAS, or ARND; (3) be willing to share their story of being diagnosed with FASD and what his/her educational experiences have been; and (4) not currently experiencing any immediate crisis. Purposeful or selective sampling was used to recruit participants for this study. As Gall, Gall, and Borg (2007) suggested, the goal of purposeful sampling "is to select cases that are likely to be 'information-rich' with respect to the purposes of the study" (p. 178). Therefore, participants selected would have the appropriate experiences, knowledge, and/or ability to provide rich data and would be willing to participate in the current study (Trainer, 2013). Therefore, participants were asked to participate in this study through recruitment posters (see Appendix A) that were distributed by willing post-secondary institutions, including: University of Saskatchewan, University of Regina, Saskatchewan Polytechnic, Saskatoon Skills and Trades Center, as well as many of the Regional Colleges throughout Saskatchewan. The recruitment posters were also uploaded online through the University of Saskatchewan's Personalized Access to Web Services (PAWS) Bulletin Board and were distributed to the following community agencies: FASD Support Network of Saskatchewan, SaskAbilities Partners in Employment (Saskatoon and Regina), and the SaskAbilities Training Center in Saskatoon.

When no participants were recruited with this inclusionary criteria, an amendment was submitted to the University of Saskatchewan Ethics Board on November 27, 2019 to modify the inclusionary/exclusionary criteria to not only include post-secondary students with Fetal Alcohol Spectrum Disorder (FASD) who are currently enrolled in post-secondary programs, but also students who have been enrolled and left/discontinued or completed post-secondary studies in the last five years; and to offer an incentive to participants. Specifically, in appreciation for their participation in this study each participant would receive a $25 gift certificate to Indigo.

Once this amendment was approved on December 6, 2019, the recruitment poster was redistributed to the same post-secondary institutions and community organizations posted above, and recruitment posters were dropped off at the North West Regional College in North Battleford and Meadow Lake. Recruitment posters were also sent to the Calgary Fetal Alcohol Network (CFAN) and Lakeland Center for FASD who had returned e-mail requests to distribute the recruitment poster. One individual was recruited under this criterion using purposeful sampling. All the a fore mentioned post-secondary institutions and community agencies in and outside of Saskatchewan were contacted and given the currently approved recruitment poster to distribute to their students. When additional individuals did not express interest in participating, a third amendment was submitted to the University of Saskatchewan Ethics Board on March 4, 2020. This ethics amendment sought to include individuals with a diagnosis of Attention Deficit Hyperactivity Disorder (ADHD) who were currently enrolled or had been enrolled in a post-secondary program within the last five years. The researcher sought to expand recruitment efforts to include individuals with similar behaviour/hyperactive behaviour challenges who have/are currently attending post-secondary institutions. This allowed the researcher to expand recruitment efforts while still focusing on how students with potentially significant challenges are able/not able to navigate post-secondary studies.

Following the approval of the third ethics amendment on March 24, 2020, purposeful sampling and snowball sampling were both used to recruit eight individuals, six of whom were diagnosed with ADHD and two who were diagnosed with FASD. Snowball sampling is a method which produces a study sample "through referrals made among people who share or know of others who possess [similar] characteristics that are of research interest" (Biernacki & Waldorf, 1981, p. 141). Criteria used to determine eligibility, included individuals who (1) were currently enrolled in a post-secondary program and have good academic standing (i.e., have met all academic requirements to remain enrolled such as meeting the set minimum academic average), or had been enrolled and left/discontinued or completed a post-secondary program in the past five years; (2) have a diagnosis of either FASD or ADHD (as self-reported by the individual); and (3) were willing and able to share their educational experiences. Reliance on self-reporting a diagnosis was necessary, as there may be potential difficulty in acquiring documents that could confirm the participants' diagnosis. Approximately 7 to 10 participants

were sought to ensure that saturation was achieved. Trainer (2013) described saturation as the point where no new themes or points in need of further explanation emerge.

Before the interview process began, each participant was screened for eligibility through a telephone conversation with the researcher. At that time the researcher assessed whether the individual spoke well and clearly enough to understand the questions. This is important to ensure that participants understand what is being asked of them and to protect their interests (Knorr, 2011). Out of the eight potential participants who contacted the researcher, none were rejected based on difficulty to communicate. All participants had completed a post-secondary program within the last five years. After the initial screening process, if participants agreed to take part in the study, an interview date and time was scheduled. The final sample included eight individuals; six of whom were diagnosed with ADHD and two of whom were diagnosed with FASD. Participants ranged in age from 27 to 58 and included six females, one male, and one participant who identified as non-binary. All participants were formally diagnosed with either FASD or ADHD, with the exception of one who received accommodations for ADHD but was never formally diagnosed with ADHD. All participants were diagnosed after high school, most being diagnosed while enrolled in a post-secondary program.

Data Generation

Due to the covid-19 pandemic in early 2020 all initial interviews were conducted using video conference. Information regarding informed consent, confidentiality and the right to withdraw participation at any time was discussed with each participant (See Appendix B). Written copies of the consent form were provided to each participant, prior to the scheduled interview, to enable participants to review the material in tandem with verbal explanations to ensure that they understood what their participation in the study entailed and their associated rights, and so they could ask for any needed clarification prior to the interview. Comprehension checks were incorporated into the consent process to ensure that all participants fully understood what they were consenting to do, and their rights to withdraw. The researcher stopped after each major section of the consent form and asked the participant if they had any questions. If they did not, the researcher proceeded on to the next section. If they did ask for clarification, the researcher restated or explained any information they questioned using alternate wording. The researcher only proceeded to the next section when the participant had verbally indicated that their question had been answered. Once the researcher had reviewed the entire consent form, the

participant signed their name to state that they understood what had been reviewed and agreed to participate in the study.

The interviews were semi-structured and included demographic questions to learn more about the unique characteristics of each participant, questions about their positive and negative school experiences in secondary and post-secondary, and the strategies/interventions/supports that have assisted the participant in achieving success (see Appendix C). Each interview was digitally recorded and fully transcribed by the researcher. Any information that could potentially identify participants was altered or deleted and each participant was given a pseudonym.

Following the interview, participants were informed that they would be provided with a copy of their transcript, via e-mail. All of the participants provided their e-mail address and were e-mailed a copy of their interview once it was transcribed. Each participant was given the opportunity to add, change, or delete portions of their transcript they were not comfortable with releasing. Each participant was also given the opportunity to set up a date and time for a second interview to go over and/or discuss their transcription before signing the data release form (see Appendix D). One participant chose to discuss their transcription over the phone before signing and returning their data release form. The remaining participants reviewed their transcripts electronically and signed their data release forms without requesting a second interview. Follow-up questions were asked to some of the participants. These follow-up questions were either sent to the participants electronically (i.e. e-mail) or asked through a phone conversation. Participants were able to choose to withdraw from the study at any time up to the point of signing the data release form. After that time, they were informed that it would not be possible to remove their information from the study.

Data Analysis

Merriam (2015) described data analysis as the process of making sense of the data, which involves "consolidating, reducing, and interpreting what people have said and what the researcher has seen and read" (p. 202). Thematic analysis is "the method for identifying, analysing, and reporting patterns (themes) within data" (Braun & Clarke, 2006, p. 6). Data from this study was analyzed thematically and coded to identify different categories and common subjects. Consistent themes throughout the interviews were identified. Data was also analyzed and interpreted using the resiliency theory as a framework in identifying recurring patterns or

themes across the data. For example, questions were asked about the positive experiences they experienced and how they were able to achieve success despite the barriers they faced.

Braun and Clarke (2006) suggested six phases of thematic data analysis. The first phase involves familiarising oneself with the data, which entails the researcher immersing self in the data through repeated reading and actively searching for meanings and patterns (Braun & Clarke, 2006). The second phase involves generating a list of initial codes that appear interesting to the analysist and are meaningful to the phenomenon (Braun & Clarke, 2006). The next phase is searching for themes. This phase "involves sorting the different codes into potential themes and collating all the relevant coded data extracts within the identified themes" (Braun & Clarke, 2006, p. 19). At this stage resiliency theory was utilized to identify themes related to students' experiences with success despite barriers they may have faced (Brandt, 2016). For example, what supports and accommodations did the participants utilize to help them achieve success in their post-secondary studies. Once themes were established the researcher moved on to phase four of reviewing and refining the themes (Braun & Clarke, 2006). During this phase, the researcher considered the validity of the individual themes in relation to the entire data set (Braun & Clarke, 2006). For example, the researcher found similar words or experiences that the participants used when talking about their experiences. Braun and Clarke (2006) stated that at the end of this phase the researcher "should have a fairly good idea of what [the] different themes are, how they fit together, and the overall story they tell about the data" (p. 21). The next phase involves clearly defining and naming each theme (Braun & Clarke, 2006). The sixth, and final phase involves producing the report, which entails a final analysis of fully developed themes and write-up of the report (Braun & Clarke, 2006).

Evaluation Criteria

The standard for rigor in conducting qualitative research is often referred to as trustworthiness and is considered the extent to which the reader can trust that the results and interpretations are grounded in the data (Merriam, 2015). Guba (1981) identified four main categories for determining trustworthiness of qualitative research: credibility, transferability, dependability, and confirmability.

Credibility

Credibility seeks to ensure that the study measures what is actually intended (Shenton, 2004). The following provisions were implemented in this research study to ensure credibility

including, but not limited to: site triangulation, debriefing sessions with participants, and member checks (Shenton, 2004). Shenton (2004) suggested that site triangulation can be achieved by the participation of participants from several institutions "so as to reduce the effect on the study of particular local factors peculiar to one institution" (p. 66). Several institutions and community agencies were contacted, both in and out of Saskatchewan to ensure site triangulation. Participants were given the opportunity to review a copy of the transcript from the interview to 'check' the accuracy of the data (Shenton, 2004). Follow-up questions were also asked to some of the participants. These follow-up questions were either sent to the participants electronically (i.e. e-mail) or posed to the participant in a phone conversation. Member checks provided the participants with the opportunity to confirm that the data matched what they intended and to correct or add any information that was not present, so their experiences were accurately captured (Shenton, 2004).

Transferability

Transferability refers to the extent to which the findings of one study can be applied to other situations (Merriam, 2015; Shenton, 2004). Shenton (2004) suggested that it is important that sufficient thick description of the phenomenon is provided to allow the reader to have a proper understanding of the phenomenon. Detailed and thick descriptions were provided to meet transferability criteria. This included a wide range of relevant information (e.g., what were the positive and negative experiences that they experienced throughout their education) and direct quotations from participants in the study.

Dependability

Dependability verifies that the study's findings are consistent and repeatable (Merriam, 2015; Shenton, 2004). Shenton (2004) suggested that the process within the study should be reported in detail in order for future research to repeat the work, even if it won't necessarily lead to the same result. In order to achieve dependability, the researcher kept the audio-recordings, and transcripts, as well as researcher comments and memos that were taken during the interview. The purpose of this was to aid in the process of simultaneously collecting and analyzing the data. Furthermore, member-checks and peer debriefing, as well as the use of basic interpretive data analysis method, helped to ground the findings in data (Braun & Clarke, 2006).

Confirmability

Confirmability determines that the findings of the study are the actual result of the experiences and ideas of the participants and not the characteristics and preferences of the researcher (Shenton, 2004). In following the steps for Braun and Clarke's (2006) thematic analysis and documentation through the use of audio-recordings, transcripts, and researcher comments and memos, it was confirmed that the participants in this study shard experiences from which themes could be developed. Further, site triangulation and member checks were also used to authenticate confirmability.

Ethical Considerations

Ethics approval was requested from the University of Saskatchewan's Ethics Board. Participation in the study was voluntary and the participants had the right to withdraw from the study at any time. Informed consent, confidentiality, and the right to withdraw their participation at any time was discussed with participants before beginning the interview. Digital recordings of the interviews were only available to the researcher. Data from this study will be properly stored for the required five years in the office of Dr. Laureen McIntyre, the researcher's supervisor, in the Department of Educational Psychology and Special Education in agreement with the University of Saskatchewan regulations. No identifying information was used within this present study and each participant was assigned a pseudonym to protect their identity.

In the following chapter, the findings from this research study are presented and the themes that emerged from the data are discussed.

Chapter Four: Results

This chapter introduces the eight participants who contributed to this study by sharing their successful and challenging school experiences and how they overcame their individual barriers to achieve academic success in their post-secondary studies. Recall that the inclusionary criteria used to determine participant eligibility for this study included individuals who: (1) were currently enrolled in a post-secondary program and had good academic standing (i.e., met all academic requirements to remain enrolled such as meeting the set minimum academic average), or had been enrolled and left/discontinued or completed a post-secondary program in the past five years; (2) had a diagnosis of either FASD or ADHD (as self-reported by the individual); and (3) were willing and able to share their educational experiences. These eight participants each demonstrated characteristics of resiliency to overcome obstacles and barriers throughout their education to achieve success in post-secondary. Pseudonyms were given to each participant to provide confidentiality. Participants' quotations were often edited to protect confidentiality and increase readability. For example, specific names of people, programs, or locations were changed or eliminated and repetitive and unnecessary language (e.g., like, yeah, um) was eliminated.

Participants

Of the eight participants in this study, six identified as female, one identified as male, and one identified as non-binary or gender x. Participants ranged in age from 27 to 58 years. Five participants were formally diagnosed with Attention Deficit Hyperactivity Disorder (ADHD), two participants were formally diagnosed with Fetal Alcohol Spectrum Disorder (FASD), and one participant was not formally diagnosed but received accommodations for ADHD in their post-secondary program. The seven participants with formal diagnoses were tested and/or diagnosed after high school, with most being diagnosed while enrolled in their post-secondary program (see Table 4).

The first participant to be interviewed was Karen, a 44-year-old who was diagnosed with FASD at the age of 40. Karen spent most of her childhood in foster care until she went to live with an aunt and four younger cousins at the age of 12. She recalled struggling in elementary school, but "never stayed in a home long enough for anyone to do anything." Karen reported that she had some classes in the resource room in elementary school and took some modified classes in secondary school. She believed it may have been suspected that she had FASD throughout her schooling but does not recall ever getting formally assessed in school. "I wasn't diagnosed until I

went and got diagnosed myself." Karen reported she barely graduated from high school and spent the majority of her 20s and 30s working various jobs. Before receiving her diagnosis, Karen completed an auto body certificate program. Karen stated she was able to complete her program alongside a friend, which she felt helped her to be successful. She also believed hands-on learning and one-on-one support from instructors contributed to her success in her post-secondary studies.

The second participant to be interviewed was Will, a 32-year-old who was diagnosed with ADHD, dyslexia, and a memory disorder in his mid-20s. Will grew up in a large family with both parents and four siblings, none of whom were diagnosed with ADHD. Will reported he had difficulties with speech and reading and spent some time in the resource room in his elementary school years. Will was not assessed in elementary or secondary school and stated he "learned to compensate." In post-secondary, Will reported he struggled academically until he was diagnosed in his third year of university. "It was my career counsellor that suggested I get tested for a learning disability after I flunked out the second time from my science-based university program." After being diagnosed, Will received accommodations through his post-secondary institution's disability services office and graduated with a bachelor's degree in a professional science program. He also felt strong family and friend support contributed to his success in his post-secondary program.

The third participant interviewed was Rae, a 29-year-old who was diagnosed with ADHD and dyslexia in her final year of science-based assistant program in 2015. Rae was raised by both parents and with an older sibling, who was also suspected to have ADHD but was never diagnosed. She reported struggling academically in elementary and secondary school but enjoyed the social aspects. "I was there for friends. I wasn't there for school." Rae stated she was assessed in Grade 6 for ADHD but did not receive a diagnosis. It was not until the end of her post-secondary program that she pursued a diagnosis. She shared:

> I found out that the national certification exam [I had to take in order to work in the profession] was on the computer… so when I got diagnosed, I applied for the accommodation to write the test on paper. I still had to put it on the computer afterwards, but I was given time and a half.

The fourth participant to be interviewed was Steven, a 32-year-old who received their certification/red seal of their specific trade in 2017. Steven was raised by both parents and with a younger sibling who was also diagnosed with ADHD. Steven recalled taking modified math in secondary school and was assessed at the age of eight and again in high school for ADHD. Even though they never received a formal diagnosis of ADHD, the report was enough to receive accommodations for support in post-secondary. Steven reported struggling with the independence and the responsibility of studying and completing assignments on their own but had good family and friend support.

The fifth participant to be interviewed was Kristina, a 27-year-old who was diagnosed with ADHD, dyslexia, and a learning disability in math. Kristina reported she was diagnosed with dyslexia in Grade 3, but her attention/hyperactivity issues were missed when she was younger. Kristina was raised by both parents and grew up with an older sister who did not have an ADHD diagnosis. Kristina reported she received resource room support throughout her elementary and secondary education. She also reported she had to get retested in university to receive accommodations for her dyslexia. At that time, she was diagnosed with ADHD and a math specific learning disability. Kristina received accommodations in her post-secondary studies and graduated with a bachelor's degree in a professional occupation in 2016.

The sixth participant to be interviewed was Janet, a 37-year-old who was diagnosed with ADHD at the age of 24. Janet was raised by both parents with two younger siblings, neither of whom had a diagnosis of ADHD. Janet took regular programming throughout elementary and secondary schooling. She stated that ADHD flags (i.e., she was disorganized, had difficulties finishing assignments on time, her attention would drift) were present throughout her education, but she was able to adapt and get by in her schooling until her post-secondary studies. At the time she was diagnosed, Janet had been struggling with completing her university classes. Janet reported her mom was a great support for her and provided her with direction and accountability. She also reported she registered with her post-secondary institution's disability office and received accommodations that helped her complete her undergraduate degree in a professional college, as well as a master's degree in an applied science program in 2017.

The seventh participant to be interviewed was Jenna, a 38-year-old who was diagnosed with ADHD at the age of 17. Jenna grew up with both siblings and a younger brother who moved out at the age of 12 to play hockey. Jenna attended regular and some advanced

educational programming in a small rural school. She received good grades in elementary and secondary school despite being “constantly bored and not putting in a lot of effort”. She reported she never received, or applied for, accommodations in university and instead used strategies and tools she knew worked for her to help her succeed in her post-secondary programs such as giving herself more time to complete assignments and using paper copies of lectures to follow along.. Jenna completed her undergraduate degree in a professional college and master’s degree in an applied science program in 2015.

The eighth and final participant to be interviewed was Stacey. Stacey was a 58-year-old who was diagnosed with Alcohol Related Neurodevelopmental Disorder (ARND) in her early 50’s. Stacey was adopted as an infant along with her adopted sister. She stated as a child she “didn’t understand things like her sister did.” Stacey and her family moved around a lot as a child and teen so she did not spend long periods of time at the same school. Stacey reported she always had difficulties with learning but did not receive any supports in elementary or secondary school. “My mother taught be how to count and do math with cards at home. My parents tried to get me tested as a child, but they said there was nothing wrong with me and I was just lazy.” Stacey also recalls being medicated for a short period of time for hyperactivity. She continued to struggle academically and socially in elementary and secondary school. Stacey dropped out of high school in Grade 10 but completed her GED in 2004. She recently started attending a professional training program in 2018. She has completed everything expect her practical exam, which she did not pass. “I need more time and training to [pass the exam].” Stacey currently has learner’s designations related to her professional training program. She reported that visual learning and hands-on training helped her get as far as she has in her training, but the memorization and retention of all of the required course information has been difficult for her.

Table 4.1

Participants

Name/Gender	Diagnosis	Age and Age of Diagnosis	Childhood	Schooling
Karen (F)	FASD	44 / 40	Foster care until 12 Moved schools often	Barely finished high school, completed autobody cert program
Stacey (F)	ARND (FASD)	58 / early 50's	Adopted as an infant along with adopted sister Moved around a lot	Struggled in elementary, dropped out in grade 10, went back for GED in 20's, has all except final certification for professional training – still at learners' designation
Will (M)	ADHD Dyslexia memory issues	32 / mid 20's	Two involved parents Family and friends supported him	Struggled with speech and reading in elementary, some time in resource room; in third year University diagnosed, graduated with BSc
Rae (F)	ADHD and dyslexia	29 / 25 in post-secondary	Two involved parents	Struggled academically but loved social aspect of elementary/ secondary. Pursued diagnosis at end of program and got help to achieve the final test for certification in science based assistant program.
Steven (X)	ADHD	32, in elementary, assessed twice (age 8 and high school), but no diagnosis; report was enough for accommodations in post-secondary	Two involved parents	Certificate in special trade achieved
Kristina (F)	ADHD Dyslexia and math disorder;	27; in elementary diagnosed with Dyslexia; other two diagnosed in University	Two involved parents	Professional bachelor's degree achieved
Janet (F)	ADHD	37 / 24	Raised by both parents with siblings. Mother a support.	Institution disability support office supported her, acquired bachelor from professional college and master's degree in applied science
Jenna (F)	ADHD	38 / 17	Family includes mother and three siblings	Did not request accommodation in University; used strategies that worked through elementary and secondary school; undergrad in prof college and masters degree in applied science

Note. F denotes female, M denotes male, X denotes non-binary or gender x.

The participants' experiences and perspectives related to successful and challenging school experiences, and how they overcame barriers to achieve academic success in their post-

secondary programs, were explored through semi-structured individual interviews. Using resiliency theory as a frame (Luthar, Cicchetti, & Becker, 2000; Masten, 2001; Murray, 2003), participants' narratives revealed three major themes: (1) "I struggled": Barriers in elementary, secondary and post-secondary school; (2) "My diagnosis was missed": Diagnosis after secondary school; and (3) "I was successful": Accommodations and supports promoting resiliency. All participants discussed different aspects of each of the major themes. These themes are discussed and linked together using meaningful participant quotes.

Theme 1: "I Struggled:" Barriers in Elementary, Secondary and Post-Secondary School

Participants in this study shared the challenges they faced in their school careers. Their reported experiences can be organized into three subthemes: (1) academic challenges in elementary and secondary education; (2) social challenges: forming friendships; and (3) post-secondary barriers.

Academic Challenges in Elementary and Secondary Education

Each participant reported experiencing academic difficulties throughout their formal schooling. Even though each participant struggled with different aspects of their academics (i.e., math, reading, memorization), they each shared they struggled in one way or another in both elementary and secondary school. Karen and Stacey both reported that learning from a book and retaining written information was the most difficult for them throughout their educational experiences. Stacey revealed "math and science and any subject I had to remember information I couldn't retain." Will revealed that school was "hard" for him, stating "I always made it through. I always passed. I was never a great student. I was usually just passing." While Kristina struggled with copying notes, reporting "It was very uninteresting for me and then on top of that I had to decode all of the [information] and write it correctly. It was exhausting."

One specific subject Steven had great difficulties with was math, revealing:

> When I was doing math…in modified math… I had ten questions to do for the next day and I would actually do them, and I would learn what I was doing. Rather than having the same exact questions in regular math and have to do 50 or 100 questions for the next day or else I would fail or not pass that section.

Rae found reading tasks to be far more difficult, reporting:

> I struggled a lot with anything that had to do with reading. As soon as I saw the words I was overwhelmed. I remember one time in the sixth grade we had to read a paragraph

aloud. I read a sentence and the teacher told me to read it again. I read the sentence again and he told me to read it again. I read it a third time. It wasn't until the fourth time that I read it that I realized I had added a word in the exact same spot all three times before that.

Whereas Janet shared tasks requiring her to be focused or organized was where she struggled, explaining:

> I would get in trouble sometimes because my desk would always be messy…I remember, at least once, getting in trouble for not finishing an assignment...I wasn't always paying attention, or my attention would drift sometimes…I think by high school I definitely procrastinated a lot. I would leave things to the last minute and I wouldn't do any work outside of class until the night before, and then I would try to power through something and stay up really late to do it.

Lastly, Jenna found oral comprehension tasks to be an area of difficulty, revealing:

> I was always a good student… Academically I was skilled and didn't struggle. Most of my diagnosis came from [my] difficulty with oral comprehension and not being able to pay attention to oral instruction.

Social Challenges: Forming Friendships

The ability to form friendships was another area of common difficulty for some of the participants. Karen, Stacey and Steven all discussed the difficulties they each had making friends in school. For example, Karen stated, "[I felt like I was] invisible and had no friends. I got bullied a lot by kids my own age. I preferred to hang out with my younger cousins and their friends." Stacey revealed that she "had very little to no friends" and that her and her family moved so often that it was difficult to make friends, stating "I didn't live in a place long enough to make friends… Eventually I just stopped trying." Steven described their experience as "always [feeling] weird [and] always different". Steven added, "I thought I was getting along with kids great and then I found out I was getting bullied… I didn't really fit in."

Post-Secondary Barriers

Encountering barriers in post-secondary education was another shared experience among the participants. Karen and Stacey reported that they each continued to experience the same barriers they faced in their elementary and secondary school experiences. Karen revealed that she continued to "struggle with retaining written information" and did poorly on written exams, whereas Stacey discussed her difficulty "memorizing and retaining" required course information.

The remaining six participants reported they faced new challenges and barriers when they entered post-secondary programs. Kristina found her courses were a barrier for her, explaining "I had long class times that lasted three hours or a whole morning. By the end of class I felt burned out." Kristina also disclosed that "poor time management and organizational skills" made it difficult for her to succeed in post-secondary. Course load was also a barrier for Will. He shared:

> The course load was insane, and I wasn't able to keep up. On top of that there was extra pressure on test taking, which is where I failed… There was also the financial stress of post-secondary… I went a couple years with only eating Ichiban and Kraft Dinner.

However, Steven reported difficulties with independence and accountability in their post-secondary program, stating:

> The hard part was that the studying was left to me. If I went home and did the homework I would do well. If I went home and didn't do the homework and went to the bar instead or hung out with my friends, then I wouldn't do well. Sometimes I struggled with the whole independence and accountability of it all.

Steven also outlined their experiences with the perceptions of their instructors:

> There are some instructors that don't understand [your difficulties] and they think you are incompetent because you can't learn the material the same way they teach it. And then you have other instructors that understand that you can learn, and they give you the support that you need to be successful.

Perceptions of their instructors was also identified by both Rae and Jenna as creating a barrier to their success. As Rae reported:

> Even with a diagnosis, some instructors weren't very understanding. I had a few instructors, one in particular that comes to mind, that were exceptionally rude because I was disrupting other students… Instructors would get frustrated with me for things I couldn't help or control… [such as] when I asked them questions about information that was just explained or if I asked classmates about what had just been explained. They thought it was distracting for other students.

Jenna shared Rae's concerns revealing:

> There were certain professors who didn't have a good understanding of how difficult it was for me and how hard I had to work to do well. Also, some professors didn't like to

> give handouts and instead talked throughout the class, which I had a really difficult time with.

Whereas Janet identified program time limits as one barrier that hindered her success in her post-secondary program, reporting:

> One of the difficulties was the amount of time I had to complete the program. There was no set deadline, other than sometime within five years, and I did not deal with that very well. If I had been told I had to finish my program in two years I would have finished in two years, but because I could take up to five my work kept getting pushed back and I would procrastinate or get side-tracked with other things.

Janet also felt stressors in her life acted as a barrier to her post-secondary success, stating:

> I was married for a year in university and when that broke up there was a lot of stress and emotions that made it harder to focus on school… I made impulsive decisions which caused financial distress for me and that wasn't very helpful.

Theme One Summary

In summary, each participant described the challenges they faced throughout their school experiences. Each participant discussed their academic challenges they faced in elementary and secondary school and the barriers they faced in post-secondary prior to their diagnosis. Karen, Stacey, and Steven each described their experiences with forming friendships in elementary and secondary school. Retrospectively, each participant was cognizant of the difficulties they experienced in elementary and secondary school, yet each participant revealed that they were not diagnosed until post-secondary. The participants also discussed their experiences of being diagnosed after secondary school and the regret some of them felt at not being diagnosed sooner.

Theme 2: "My diagnosis was missed:" Diagnosis after Secondary School

Each participant disclosed that they were diagnosed after their secondary schooling was completed, with the youngest age of diagnosis being at age 17. Steven, Rae, and Kristina all revealed they had been previously assessed in elementary school but had not received an ADHD diagnosis at that time. Steven revealed they were assessed twice for ADHD, the first time when they were 8 years old and the second time when they were 15. They revealed even though they did not receive a formal diagnosis the assessment report was still enough for them to receive support during their post-secondary programming. While Rae shared her experience with being assessed in elementary school:

> My teacher had me observed in grade 6 and they didn't tell me what was going on. I happened to be having a particularly good focusing day that day and her [recommendations] came back that there was no diagnosis or nothing she wanted to follow up on, which to me seems like a missed opportunity.

Kristina also described her experience with having her ADHD missed in elementary school, stating:

> I was assessed and diagnosed with dyslexia in grade three…but they missed my ADHD when I was little… I would say I was diagnosed later in life because I am a girl and they seem to miss ADHD in girls more often than boys… I had to be retested in university in order to receive accommodations for my dyslexia and that is when they diagnosed with me with ADHD.

Will, Jenna, and Janet provided some insight into being diagnosed in post-secondary and suggested that being diagnosed earlier would have helped them be more successful, not just in elementary and secondary school, but throughout their post-secondary education as well. As Jenna stated, "My diagnosis got missed for a long time because I was higher functioning academically and it would have been better for me if it was caught earlier." Will wished he had been diagnosed earlier, declaring:

> If I had been diagnosed in elementary or high school, especially in elementary, my educational experience would have been a lot more positive and I probably wouldn't have wasted years of my life struggling in school.

Janet revealed being diagnosed earlier in life would have helped her be more successful in post-secondary, reporting:

> I was diagnosed so late. I think I was seven years into undergraduate studies by the time I was diagnosed, and I had been really struggling. I didn't understand why, when elementary and high school were fine, that I could not be successful at university… I couldn't figure out what was going on. I had sought some different help, but nothing seemed to be helping. Nobody seemed to understand what was going on.

Janet also discussed her struggle with completing her undergrad program and rectifying her grades prior to her diagnosis, revealing:

> I considered dropping out of university before I completed the assessment and was diagnosed with ADHD. And then, even after getting diagnosed, I was frustrated with trying to resolve and rectify the negative impact being undiagnosed had on my grades.

In summary, each participant disclosed they were diagnosed after secondary school. Steven, Rae, and Kristina discussed their experience of being assessed in elementary school, but not receiving a diagnosis. While Will, Jenna, and Janet disclosed that a diagnosis at an earlier age may have allowed them to be more successful throughout their education, specifically in post-secondary. Despite being diagnosed after secondary school, each participant experienced their own success in post-secondary. Based on these experiences, the participants also shared how each of them was able to achieve success in post-secondary in the face of their challenges.

Theme 3: "I Was Successful:" Accommodations and Supports Promoting Resiliency

In sharing their educational experiences, each participant provided examples and rich descriptions of how they were able to overcome their academic struggles and experience success in their post-secondary studies. They described accommodations within their individual post-secondary institutions and unwavering support from their family and friends as two predominant supports that promoted their success. Their reported experiences can be organized into two subthemes: (1) post-secondary institution accommodations; and (2) supportive family and friends.

Post-Secondary Institution Accommodations

Seven of the eight participants reported receiving accommodations/support from their post-secondary programs. Jenna revealed how she was successful in her post-secondary studies without accessing formal accommodations:

> I never registered for accommodations in university. I've always plugged through on my own, using a lot of tools that I have developed over the years… by finding my own way to do things. I definitely have tools that I use, such as giving myself more time to complete assignments and using paper copies of lectures to follow along, but I learned them on my own.

Karen stated the "one-on-one support from her instructors helped her to be successful" in her programming. Stacey explained it was hands-on programming and visual learning that was part of her program that helped her succeed, reporting "it was the visual learning and hands-on

approach that was supportive." Will stated that his post-secondary institution's disability services program "provided me with accommodations such as extra time on tests and note-takers". Rae also felt extra-time on tests, as well as the ability to write her exams on paper rather than on a computer helped her to be successful in completing her program, sharing "once I was diagnosed I received the accommodation to write my exam on paper. I still had to [input] it all onto the computer afterwards, but I was given time and a half to complete the exam."

Janet disclosed she utilized several accommodations to help her succeed in her post-secondary programs, stating:

> for the latter part of my undergrad degree and my master's degree, I registered with the [disability services program] … office and received accommodations such as time and a half for exams, writing exams in a private room just on my own, extensions on assignments if needed, and I could type out my exams on a computer instead of writing them out by hand… Other than that, I was not penalized for occasional absences.

Janet also felt "instructors in the program that were more familiar with accommodations and the need to accommodate" helped her by providing her with the supports she needed to be successful in her program.

Kristina identified note-takers as contributing to her success, as well as extended due dates for assignments, private rooms for test taking, and the use of assistive technology. She explained:

> I use a lot of tools with my ADHD. I set timers, made a lot of to-do lists, and use voice-to-text technology. I have done a lot of research. My goal is to continue to use the tools that I already use like timers and reminders and technology to help with time management and organizational skills.

Steven, as mentioned previously, was never formally diagnosed with ADHD, but used the report from their assessment at age 15 to access accommodations and support their success in post-secondary studies. They shared, "With the information available in my report I was able to get time and a half on exams… and I was able to write exams in a private room."

Will and Kristina both credited medication as an external support contributing to their success in their post-secondary studies. Kristina explained, "being on medication made a huge difference." Will also described the benefits he experienced with using medication to manage his symptoms as well as using other accommodations, stating "Once I was put on [medication],

combined with the supports that I had, I started excelling in university and I went from barely passing and failing to honors." Participants also felt those people closest to them helped them to succeed.

Supportive Family and Friends

Support from family and friends were also a discussion point with each of the participants when discussing the factors that helped them to be successful. Stacey shared, "my parents wouldn't let me quit and that stuck with me throughout my life. Having someone there to support me was helpful." Karen suggested having a friend/mentor in her program of study, as well as patient and understanding teachers contributed to her success in her program, stating "learning from someone who understood how I learned things and was able to explain the information to me in a way I understood helped me to get as far as I did." Will discussed finding a program he found interesting as well as support from his family and friends helped him to succeed in his studies, reporting "my family and friends helped me when I needed it. My family made me meals and made sure I ate properly and my friends that I was in school with studied with me for support." Steven also felt strong family and friend support were factors that contributed to their success, stating "Basically someone that was going to kick my ass if I didn't do well was a good motivator for me." Kristina stated both of her parents were "super involved" throughout her education, not only helping her get diagnosed with dyslexia in grade three but also advocating for her educational supports at an early age. Both Will and Kristina revealed that financial support from the government, based on their diagnoses, helped to lessen the financial burden of their post-secondary studies. For example, Kristina stated "I didn't think I was going to university until I found out I could go for free. It was a risk-free option for me." While both Janet and Rae credited their moms as the major contributing factor to their school success. Janet explained, "my mom served as my coach and my mentor. She provided me with more specific direction… and would check in almost like she was my accountability person"; whereas Rae revealed:

> My mother helped me to succeed. She was willing to put in the time. She drove to [where I was living] multiple times to help me study and help keep me focused on studying. She was also there to help me with all the emotions that go with moving out on your own for the first time.

In addition, Stacey passed on her hope for future students diagnosed with FASD:

> These students need patient and understanding people in their lives [both outside and inside their program of study] to help them learn better and give them the time and [tools] that they need to be successful.

Theme Three Summary

In summary, participants provided examples of how they were able to overcome their academic struggles to experience success in post-secondary. Participants described accommodations within their institutions and support from their family and friends as two predominant supports that helped them be successful in post-secondary. Other supports, such as medication and financial support were also discussed.

Summary

The experiences described in this chapter reveal some of Karen, Will, Rae, Steven, Kristina, Janet, Jenna, and Stacey's positive and challenging educational experiences and how they were able to achieve success in post-secondary. Three major themes were identified in these participants' interviews. The first theme, "I struggled": Barriers in elementary, secondary, and post-secondary school, focused on barriers throughout their education, including barriers in elementary and secondary school as well as barriers they faced in post-secondary. The second theme, "My diagnosis was missed": Diagnosis after secondary school, focused on diagnosis and the concerns some participants had on not being diagnosed earlier in life. For example, Will, Rae and Kristina spoke of their experiences with being assessed, and not receiving a diagnosis early on in their education only to be diagnosed later in life. The third and final theme, "I was successful": Accommodations and supports promoting resiliency, focused on the positive experiences related to the accommodations and supports they received that helped them succeed in their post-secondary studies. Despite barriers participants faced throughout their education, they were each able to achieve their own level of success within their post-secondary programs and therefore demonstrated resiliency.

The final chapter discusses these findings in relation to the factors of resiliency and existing research, the practical implications of these findings, the limitations and strengths of this study, and potential areas for future research.

Chapter Five: Discussion

This basic interpretive qualitative study explored the successful and challenging school experiences of eight post-secondary students who were diagnosed with FASD or ADHD, and how they overcame their individual barriers to achieve academic success in their post-secondary studies. The participants' experiences were viewed using resiliency theory (Luthar, Cicchetti, & Becker, 2000; Masten, 2001; Murray, 2003) and explored the factors participants associated with helping them achieve academic success in their post-secondary programs. This chapter reviews and summarizes the main findings of this study and discusses how these findings relate to resiliency and existing research literature. Implications for educators, the strengths and limitations of the current study, and areas for future research are also discussed.

Summary of Findings

Although the participants in this study described different areas of academic difficulty (e.g., difficulties retaining information, as well as difficulties with reading, math, or copying notes), they all faced similar challenges and barriers throughout their educational experiences and were able to achieve their own level of success in post-secondary. The purpose of this study was to describe the post-secondary experiences of individuals with FASD and ADHD with the hope of creating a better understanding as to how these individuals achieved success. The research question that guided this study was:

(1) What are the school experiences of post-secondary students diagnosed with Fetal Alcohol Spectrum Disorder and Attention Deficit Hyperactivity Disorder?

(a) What strategies/interventions/supports have allowed these students to achieve success in post-secondary education?

Karen, Will, Rae, Steven, Kristina, Janet, Jenna, and Stacey shared successful and challenging school experiences and how they overcame their individual barriers to achieve academic success in their post-secondary studies. The first theme, I struggled: Barriers in elementary, secondary, and post-secondary school, focused on the barriers each participant faced throughout their education, including elementary and secondary school, as well as post-secondary. Participants described their experiences related to academic difficulties they encountered during elementary and secondary school. This included Karen and Stacey reporting difficulties with retaining information, Kristina expressing her difficulties copying notes, Steven discussing their difficulties with math, and Rae sharing her difficulties with reading. Will

revealed he struggled to get good grades in school, while Janet described her difficulties with focus and organization, and Jenna indicated she had difficulties with oral comprehension. Additionally, Karen, Stacey, and Steven discussed their difficulties with making friends in elementary and secondary school, such as when Karen described feeling invisible and being bullied by her peers. Another commonality all of the participants shared was being challenged by various barriers in their post-secondary studies. For example, Will and Kristina indicated they struggled with course expectations in post-secondary, while Rae and Jenna shared their experiences with instructors and professors who did not have a good understanding of their disability. Steven attributed their barriers to internal struggles with independence and accountability, while Janet reported it was personal stressors such as ending of romantic relationships and financial stress that played a part in her struggles in post-secondary.

Intertwined with these barriers was the fact that seven of the participants reported they did not receive an ADHD or FASD diagnosis until after secondary school and one was never formally diagnosed. Many participants indicated they continued to struggle academically in post-secondary until they received an official ADHD or FASD diagnosis and were able to access formal supports. Apart from Karen and Stacey who were both diagnosed with FASD later in life, the remaining participants received their diagnosis during their post-secondary schooling. Therefore, the second theme: My diagnosis was missed: Diagnosis after secondary school, focused on each of the participant's experiences with their diagnosis in relation to their schooling. Steven, Rae, and Kristina shared their experiences of being assessed in elementary school but not receiving an ADHD diagnosis. For example, Rae described her early experience with having her ADHD missed in elementary school. Although Will, Jenna, and Janet were not assessed and diagnosed until after secondary school, each of them expressed the belief that having a diagnosis earlier would have helped them be more successful throughout their schooling. For example, Will expressed that if he had been diagnosed with ADHD in elementary school his experiences would likely be more positive, and he probably would have struggled less throughout his education.

Despite these participants academic difficulties and negative educational experiences each of them has achieved success within their post-secondary programs, and therefore have demonstrated resiliency in the face of adversity. The third and final theme, I was successful: Accommodations and supports promoting resiliency, focused on the participants' positive

educational experiences that allowed them to overcome adversity and demonstrate resiliency and success in their post-secondary studies. Post-secondary institution accommodations and supportive family and friends were two predominant factors that allowed these participants to achieve success. For example, seven of the eight participants received accommodations within their program of study. Karen stated that one-on-one support from her instructors help her be successful in her program. Stacey explained visual and hands-on learning supported her ability to learn information. Will, Rae, Janet, Kristina, and Steven utilized opportunities for accommodations through programs offered by their post-secondary institutions, which they attributed to helping them achieve success. Jenna revealed how she was successful in her post-secondary studies without registering and accessing formal accommodations within her institutions. For example, she stated that she used her own tools, such as giving herself more time to complete assignments and using paper copies of lectures to follow along, to help her succeed. Support from family and friends was also discussed as a vital factor in their success. For example, Karen stated that learning from a friend/mentor who was also taking the same program was supportive as they understood her disability. Karen, Janet, and Rae credited family as major contributing factors to their success in their post-secondary studies. Additionally, Stacey passed on her hope for future students who shared her diagnosis of FASD, stating that these students need patient and understanding people (both outside and inside their program of study) in their lives to help them achieve success.

Study Specific Findings and Integration with Existing Research Literature

The findings from the current study relate to literature focused on the post-secondary experiences of students with FASD and ADHD, how they experienced support and success within their education, and how they demonstrated resiliency despite the difficulties they encountered along the way. The two main themes identified in these experiences are discussed further and connected with existing research in the areas of: (1) school experiences of post-secondary students with FASD and ADHD, and (2) patterns of resiliency in post-secondary students with FASD and ADHD.

School Experiences of Post-Secondary Students

In the current study, eight participants described their own unique experiences related to academic difficulties. Karen and Stacey, both of whom were diagnosed with FASD, reported difficulties with retaining information, Kristina expressed her difficulties copying notes, Steven

discussed their difficulties with math, and Rae shared her difficulties with reading. Will revealed he struggled to get good grades in school, while Janet described her difficulties with focus and organization, and Jenna indicated she had difficulties with oral comprehension. The wide range of academic difficulties that both participants with FASD experienced is consistent with research that FASD encompasses a wide range of deficits, which may include: problems understanding social cues, indiscriminate social behaviour, such as difficulties making friends, and difficulty communicating in social contexts (Doyle & Mattson 2015); intellectual functioning (Boseck et al. 2015); verbal and nonverbal learning and memory (Coles et al. 2010); and executive functioning, which includes planning, inhibition, working memory, organized search, flexible thinking and fluency (Mattson et al. 2014; Nguygen et al. 2014). This study also found that the participants with ADHD also experienced different academic difficulties, such as difficulties in math, reading, coping notes oral comprehension, and difficulties with focus and organization. These difficulties are supported by previous research suggesting that the learning needs of students with ADHD are individualized and unique (Brandt, 2016).

Additionally, Karen, Stacey, and Steven discussed their difficulties with making friends in elementary and secondary school. These findings have been reported in other research studies considering the social functioning of students with FASD and ADHD. For example, Mattson and Riley (2000) revealed that children with reported alcohol exposure had significant difficulties in social, attention, and aggressive domains, based on parent ratings of the child's behaviour. Research on students with ADHD has also suggested they have difficulties with social adjustment and functioning (Brown, 2013; Jarrett 2016; Weyandt et al. 2013).

Another finding of this study was the similarities between students diagnosed with FASD and those who were diagnosed with ADHD. Both groups experienced academic and social difficulties throughout their education. Tsang et al. (2016) indicated that individuals with FASD have impairments in attention, disruptive behaviour, academic performance, and social judgement (Tsang et al. 2016). Other research on individuals with prenatal alcohol exposure have found that individuals with FASD have higher rates of attention-deficit/hyperactivity disorder (ADHD; Doyle & Mattson, 2015; Riley & McGee, 2005). Burd, Klug, Martsolf, and Kerbeshian (2003) established that comorbid attention deficit hyperactivity disorder occurred in 73% of cases with FAS, 72% of cases with partial FAS or ARND, and 36% of individuals who did not meet diagnostic criteria for either. In another study, Bhatara, Loudenberg, and Ellis

(2006) explored the association between the occurrence of ADHD and prenatal alcohol exposure. Results of this study revealed that 41% of individuals with prenatal alcohol exposure were also diagnosed with ADHD (Bhatara, et al., 2006). Therefore, even though FASD and ADHD are separate diagnoses they share similar characteristics and symptoms. To date, research has focused on the association and comparison of ADHD and FASD, but no study has considered resiliency factors for both groups in the same study. By comparing the two groups there are some similarities that can be used to expand the limited research of post-secondary students with FASD.

A unique finding of this study was that all eight participants were diagnosed after high school. Many participants commented on their diagnosis later in life stating that they felt that a diagnosis earlier of FASD or ADHD would have allowed them to have more positive educational experiences and experience greater success throughout their education. For example, Will stated that if he had been diagnosed in elementary or high school his educational experiences would have been a lot more positive and he would not have struggled in school; whereas some, like Jenna, didn't struggle until post-secondary, which then brought on a diagnosis. To date there has not been any research on the comparison of early diagnosis versus a diagnosis later in life and will be discussed further in the implications for future research section.

Patterns of Resiliency

After being diagnosed, each participant described the strategies and supports they received from family, friends, and the post-secondary institutions they attended to help them experience success, be resilient, and face the social, emotional, and academic barriers and challenges they faced during their studies. Despite these participants academic difficulties and negative educational experiences each of them has achieved their own level of success within their post-secondary program, and therefore have demonstrated patterns of resiliency. In sharing their educational experiences, each participant provided examples as to how they were able to overcome their academic struggles and experience success in their post-secondary studies. Protective factors such as early identification and diagnosis (ideally before the age of six), early intervention for developmental and primary disabilities (i.e., intellectual functioning, language development, etc.), and receiving appropriate educational supports and programming to name a few, have been identified in the literature (e.g., Brintnell, et al., 2011; Duquette, Stodel, Fullarton, & Hagglund, 2006; Duquette & Orders, 2013; Streissguth, 2007). Participants

described accommodations within their individual post-secondary institutions and unwavering support from their family and friends as two predominant supports or protective factors that promoted their success.

Seven of the eight participants reported utilizing their institutional supports and accommodations. Karen stated that the "one-on-one support from her instructors helped her to be successful" in her programming. Stacey explained it was hands-on programming and visual learning that was part of her program that helped her succeed. Whereas many of the individuals diagnosed with ADHD reported accessing accommodations and supports at their post-secondary institution. With each experience, these participants were able to utilize academic supports that benefitted their unique learning needs. Previous research has shown that institutional factors, such as institutional accommodations and supports promote educational success (Bikic, et al. 2017; Brandt, 2016; DuPaul et al., 2017; Murray 2003). The one participant who opted not to access institutional supports or accommodations felt she already the tools (i.e., schedules more time to complete assignments, prints study materials) she needed to be successful in her studies. Similarly, other studies have noted students opting not to access institutional supports or accommodations for varying reasons such as the level of accommodations available (Hadley, 2007).

Support from family and friends were also a discussion point with each of the participants. Karen suggested that having friend/mentor in her program of study contributed to her success in her program. Will, Steven, Kristina, Janet, and Rae also suggested that their family and friends played a predominant role in helping them succeed in post-secondary. Duquette and Orders (2013) found that parental advocacy and support, as well as positive social relationships were important factors for promoting success. Other research reveals that positive parenting practices and positive friendships play a key factor in promoting success for students with ADHD (Becker, et al., 2013; Dvorsky, et al., 2016).

A unique finding of this study was that all eight participants had achieved some level of success in post-secondary education. Karen completed an auto body certificate program; Stacey completed a professional training program and even though she did not pass her practical exam, she still holds a learner's designation related to her program; Will completed his bachelor degree in a professional science program; Rae completed her science-based assistant program; Steven

completed their certification/red seal of their specific trade; Kristina completed a bachelor's degree in her professional occupation, and both Janet and Jenna completed their master's degrees in an applied science program. Therefore, this current study not only helps to better understand the protective factors that contribute to success in post-secondary education for individuals diagnosed with ADHD, it also more importantly appears to be the first study to focus on the protective factors that contribute to success in post-secondary education for students diagnosed with FASD. Currently, there is minimal research available on the school experiences of those with FASD (e.g., Duquette & Orders, 2013; Duquette et al., 2006; Knorr & McIntyre, 2016) and there is no known body of research that has focused on the positive perspectives of post-secondary students diagnosed with FASD. To create success, we must first determine what factors generate success, and this study was able to create a better understanding of how success was achieved in individuals with ADHD and FASD, as well expand the literature of individuals diagnosed with FASD who attend post-secondary.

Implications for Educators and Educational Professionals

Participants in this current study revealed that they struggled throughout their elementary, secondary, and post-secondary schooling. Previous studies have also revealed that students with FASD and ADHD experience barriers throughout their education (Brandt; Duquette & Orders, 2013; Knorr 2011) These revelations should be of interest to a variety of professionals working in school-based environments (e.g. educators/instructors/ professors, counsellors, academic advisors and disability service providers, teaching assistants, educational psychologists, etc.). The results from this study provide insight into the educational experiences of eight post-secondary students with FASD or ADHD. The experiences these participants shared offer ideas and suggestions as to how professionals might intervene and provide students with appropriate educational supports to facilitate positive educational experiences and success throughout their education. For example, many participants felt that an earlier diagnosis of ADHD or FASD would have allowed them to have more positive educational experiences and experience greater success throughout their education. To date there has not been any research on the comparison of early diagnosis versus a diagnosis later in life. It is hoped that educators, family, and other professionals working in school environments can consider these participants' experiences and develop a better understanding of how early diagnosis may benefit students in elementary and secondary education. They can also take into consideration how an earlier diagnosis could help

to facilitate their success later in life, such as in their post-secondary schooling, by providing them with appropriate supports to facilitate more positive experiences and promote educational success as early in life as possible.

Each of the participants described different academic areas that they struggled in, emphasizing that each individual best learned in different ways (Brandt, 2016). For example, Karen and Stacey both reported that learning from a book and retaining written information was the most difficult for them throughout their educational experiences. Kristina reported that she struggled with copying notes, Steven struggled with math, Rae found reading tasks difficult, and Janet struggled with tasks that required her to stay focused and organized. Lastly, Jenna indicated that oral comprehension tasks were difficult for her. Therefore, it is important that educators determine each students' individual strengths and find different ways to teach these students so that they can understand, learn, and achieve success (Brandt, 2016). It is also important to provide appropriate educational supports as early as possible to help mitigate the barriers that students could potentially experience throughout their education (Duquette & Orders, 2013).

Strengths of the Current Study

This study has four main strengths. First, this study provides insight and understanding into the school experiences of post-secondary students with FASD or ADHD. Participants' experiences further our understanding of how their diagnosis affected their school experiences and how they were able to succeed despite the barriers they faced. This is especially important for research involving post-secondary students diagnosed with FASD as this area is largely unexplored. Only one research study to date has examined the post-secondary experiences of individuals diagnosed with FASD (Duquette & Orders, 2013) and none that focus on the resiliency of this current population.

Secondly, this research provides post-secondary professionals (e.g. educators/instructors/ professors, counsellors, academic advisors and disability service providers, teaching assistants, educational psychologists, etc.) with insight into the school experiences of post-secondary students with FASD or ADHD. This is important so that post-secondary professionals can implement appropriate supports to better meet the learning needs of their students and facilitate more positive educational experiences and success (Brandt, 2016). Participants shared their experiences that have both hindered and helped them be successful in post-secondary. First participants shared the barriers that they faced throughout their education and many of them

shared that a diagnosis earlier on in their education would have allowed them to have more positive educational experiences and experience greater success throughout their education. Next, they discussed the supports that they received that helped them achieve success in post-secondary. The combination of these participants' own knowledge and experiences may help professionals working in school environments improve the outcomes of those with FASD or ADHD by providing them with appropriate supports to facilitate more positive experiences and promote educational success.

Next, this study employed the use of in-depth semi-structured individual interviews to collect data from participants. This interview method allowed for a flexibility in the questions being asked which included allowing for additional questions to be added if more information is needed regarding the participants experiences. By using semi-structured interviews, the researcher was able to learn how each participant experienced their own educational experiences and how they interpreted their educational success. Due to the covid-19 pandemic all interviews took place over video conference. Bolderston (2012) suggested that remote interviews, such as video conference, allows participants to be interviewed in a familiar environment, which may allow them to be more comfortable expressing their opinions. Therefore, this interview format may have also allowed for participants to feel more comfortable as they were discussing sensitive information about their experiences creating more honest and reliable data.

Lastly and most importantly, many studies have examined the school experiences of post-secondary students with ADHD (Bikic et al, 2017; Brandt, 2016) but only one study to date has focused on understanding the post-secondary experiences of students with FASD (Duquette & Orders, 2013). Also, to date research has only focused on the association and comparison of ADHD and FASD (Greenbaum, Stevens, Nash, Koren, & Rovet, 2009; Someki, 2011; Young et al., 2016), but no study has researched resiliency factors for both groups within the same study. Therefore, the results of this current study contribute to this limited body of existing research on these topics and provides a more comprehensive understanding of the experiences of individuals diagnosed with FASD and ADHD. It is hoped that this study creates a better understanding of how success is achieved in these individuals and promote success in future students diagnosed with FASD and ADHD.

Limitations of the Current Study

There are two main limitations related to this study. The first limitation was that only two post-secondary students with FASD were able to be recruited as participants in this study. While these two participants were older students (i.e., in their 40s and 50s) and reported more difficulties learning and retaining written information during their post-secondary studies than the participants with ADHD, they both experienced similar social difficulties (i.e. fitting in with peers) and encountered similar educational barriers such as lack of supports in earlier schooling including teachers who negatively impacted their learning (e.g., lack of understanding of disability, perceived instructors lacked empathy toward the difficulties they experienced).

The second limitation was that a single method of data gathering was used in the form of ae semi-structured interview. However, this method of data gathering was supplemented to establish credibility in the study by triangulating the interview data, including: (1) the use of multiple data sources, as each participant had one initial interview and was offered a follow-up interview. Most participants declined the second interview and choose to view their transcripts through e-mail, sending an electronic copy of their data release form once they had reviewed the data; (2) member checks provided the participants with the opportunity to confirm that the data matched what they intended and to correct or add any information that was not present. This included sending participants follow up emails or phone conversations to clarify provided information and giving them the opportunity to review a copy of the transcript from the interview to check the accuracy of the data; (3) comparing and examining the current studies data with relevant literature at the time; and (4) peer debriefing with the researcher's thesis supervisor. Therefore, while only individual interviews were used to gather to explore participants' experiences, the researcher strove to ensure the information collected accurately reflected participants' perceptions and experiences.

Implications for Future Research

There were three main implications for future research based on the current findings regarding the educational experiences of post-secondary students. First, based on the experiences and suggestions made by participants, future research should investigate the impact early diagnosis has on students' educational experiences. To date there has not been any research on the comparison of early diagnosis versus a diagnosis later in life. Timing of diagnosis was beyond the scope of this study but should be studied further to determine if early diagnosis

impacts school experiences and academic success. Therefore, a study that considers individuals' age when diagnosed (i.e., those who were younger or older when diagnosed) and their age when they completed their post-secondary studies to consider if/how age may change their experiences/stories is important.

Second, the area of resiliency as it relates to individuals with FASD and ADHD needs to be explored further. Some of the positive experiences and influences that contributed to participants' resiliency in the current study were post-secondary institution accommodations and support from family and friends. However, there is still limited research that focuses on the specific supports that individuals with FASD and ADHD use to overcome adversity is post-secondary (DuPaul, et al. 2017; Duquette & Orders, 2013; Sibley & Yeguez, 2018). This is especially significant for students diagnosed with FASD as there is limited research on this specific population.

An important point to share with researchers wanting to explore topics related to individuals with FASD, is the challenge the researcher experienced in recruiting post-secondary students with FASD. A few post-secondary institutions declined the recruitment poster and a few community organizations did not return the researcher's phone calls or e-mails. In addition, there may have been a possibility that students within this population may not have seen the recruitment posters posted or perhaps the population of students within this population was small and those that did fit the criteria declined to participate. The researcher worked to overcome the initial challenge of recruitment by first stating in the eligibility criteria the study was open to students who had been enrolled and left/discontinued or completed post-secondary studies in the last five years. Then the eligibility criteria were modified to expand this potential group of participants to individuals with a diagnosis of ADHD who were currently enrolled or had been enrolled in a post-secondary program within the last five years. Future research should attempt to bridge the gap on post-secondary students diagnosed with FASD.

Conclusion

In conclusion, the findings from this study were unique in that it discussed the post-secondary experiences of students with FASD and ADHD from a resiliency perspective and attempted to bridge the gap of limited research on post-secondary experiences of students with FASD. This study also suggested future recommendations to understand the potential benefit to students regarding early diagnosis. This is important as this study determined that many students

believed they would have been more successful and had more positive educational experiences if they had been diagnosed earlier in life. Most importantly, the results of this study demonstrated that despite the barriers experienced by post-secondary students with FASD and ADHD, they were able to achieve success and thus demonstrate resiliency in the face of adversity.

Appendix A

Exploring the Experiences of Post-Secondary Students with Fetal Alcohol Spectrum Disorder

Participants Needed For Research Related To School Experiences

- Are you a post-secondary student diagnosed on the Fetal Alcohol Spectrum (i.e., have you been diagnosed as being on the Fetal Alcohol Spectrum with or without sentinel features; and or previously been diagnosed with Fetal Alcohol Syndrome or FAS, Partial Fetal Alcohol Spectrum or pFAS, or Alcohol-Related Neurodevelopmental Disorder or ARND)?

- Would you be willing to discuss both your positive and negative school experiences and how you have worked to overcome any negative experiences to pursue your post-secondary studies in confidential research interviews?

I, Cindy Powell, am a graduate student researcher in Educational Psychology and Special Education at the University of Saskatchewan. I am interested in the school experiences of students with a diagnosis on the Fetal Alcohol Spectrum.

I am seeking volunteers to participate in one individual 60-90-minute interview and one follow-up meeting for my research study.

In order to participate, volunteers must:

A) Be currently enrolled in a post-secondary program;
B) Be formally diagnosed with either FAS, pFAS, or ARND;
C) Be willing to share his/her story of being diagnosed with FASD and what his/her educational experiences have been; and
D) Not currently experiencing any immediate crisis.

If you are interested in learning more about, or volunteering to participate, in this study please contact Cindy Powell by email at clp489@usask.ca or leave a voice mail message with Dr. McIntyre at (306) 966-5266.

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This research study has been reviewed by, and received approval through the Behavioural Research Ethics Board at the University of Saskatchewan (Beh ID# 824**).**

Exploring the Experiences of Post-Secondary Students with Fetal Alcohol Spectrum Disorder

Participants Needed For Research Related To School Experiences

- Are you a post-secondary student diagnosed on the Fetal Alcohol Spectrum (i.e., have you been diagnosed as being on the Fetal Alcohol Spectrum with or without sentinel features; and or previously been diagnosed with Fetal Alcohol Syndrome or FAS, Partial Fetal Alcohol Spectrum or pFAS, or Alcohol-Related Neurodevelopmental Disorder or ARND)?

- Would you be willing to discuss both your positive and negative school experiences and how you have worked to overcome any negative experiences to pursue your post-secondary studies in confidential research interviews?

I, Cindy Powell, am a graduate student researcher in Educational Psychology and Special Education at the University of Saskatchewan. I am interested in the school experiences of students with a diagnosis on the Fetal Alcohol Spectrum.

I am seeking volunteers to participate in one individual 60-90-minute interview and one follow-up meeting for my research study.

In order to participate, volunteers must:

E) Be currently enrolled in a post-secondary program or have been enrolled and left/discontinued or completed a post-secondary program in the past five years;
F) Be formally diagnosed with either FAS, pFAS, or ARND;
G) Be willing to share his/her story of being diagnosed with FASD and what his/her educational experiences have been; and
H) Not currently experiencing any immediate crisis.

In appreciation for their time, each participant will receive an Indigo gift card.

If you are interested in learning more about, or volunteering to participate, in this study please contact Cindy Powell by email at clp489@usask.ca or leave a voice mail message with Dr. McIntyre at (306) 966-5266.

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This research study has been reviewed by, and received approval through the Behavioural Research Ethics Board at the University of Saskatchewan (Beh ID# 824**).**

Exploring the Experiences of Post-Secondary Students with Fetal Alcohol Spectrum Disorder or Attention Deficit Hyperactivity Disorder

Participants Needed For Research Related To School Experiences

- Are you a post-secondary student diagnosed on the Fetal Alcohol Spectrum (i.e., with or without sentinel features) (i.e., have you been diagnosed as being on the Fetal Alcohol Spectrum with or without sentinel features; and or previously been diagnosed with Fetal Alcohol Syndrome or FAS, Partial Fetal Alcohol Spectrum or pFAS, or Alcohol-Related Neurodevelopmental Disorder or ARND) or with Attention Deficit Hyperactivity Disorder (ADHD)?
- Would you be willing to discuss both your positive and negative school experiences and how you have worked to overcome any negative experiences to pursue your post-secondary studies in confidential research interviews?

I, Cindy Powell, am a graduate student researcher in Educational Psychology and Special Education at the University of Saskatchewan. I am interested in the school experiences of students with a diagnosis on the Fetal Alcohol Spectrum or with Attention Deficit Hyperactivity Disorder.

I am seeking volunteers to participate in one individual 60-90-minute interview and one follow-up meeting for my research study.

In order to participate, volunteers must:

I) Be currently enrolled in a post-secondary program or have been enrolled and left/discontinued or completed a post-secondary program in the past five years;
J) Be formally diagnosed on the Fetal Alcohol Spectrum, or with Attention Deficit Hyperactivity Disorder;
K) Be willing to share his/her story of being diagnosed with FASD or with ADHD and what his/her educational experiences have been; and
L) Not currently experiencing any immediate crisis.

In appreciation for their time, each participant will receive an Indigo gift card.

If you are interested in learning more about, or volunteering to participate, in this study please contact Cindy Powell by email at clp489@usask.ca or leave a voice mail message with Dr. McIntyre at (306) 966-5266.

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This research study has been reviewed by, and received approval through the Behavioural Research Ethics Board at the University of Saskatchewan (Beh ID# 824)

Appendix B

Participant Consent Form

You are invited to take part in a research study called *"Exploring the Experiences of Post-Secondary Students with Fetal Alcohol Spectrum Disorder and Attention Deficit Hyperactivity Disorder"*. Please read this form carefully and feel free to ask any questions you have about the procedures or goals of the study and your role:

Researcher: Cindy Powell, Graduate Student, Department of Educational Psychology and Special Education, University of Saskatchewan (email: clp489@mail.usask.ca, phone: (306) 480-6170.

Supervisor: Dr. Laureen McIntyre, Department of Educational Psychology and Special Education, University of Saskatchewan (e-mail: laureen.mcintyre@usask.ca)

Purpose and Procedure: You are being asked to take part in a one interview and one follow up meeting. This will give an understanding of how being diagnosed with a FASD or ADHD has affected your school experiences and how those experiences relate to your decision to participate in post-secondary education.

I want to talk freely about your experiences. The first interview will be between 60-90 minutes. I will ask you if it is okay to audio record this interview. You can ask to have the recordings turned off at any time. Later this interview will be written out word for word. Then you will be given a copy of the interview to read at the follow-up meeting.

The follow-up meeting will last around 45-60 minutes. The information from the audio recordings will only be heard by me and my supervisor. Your name and identity will be kept private by using a different name. You are encouraged to answer only those questions which you are comfortable with.

All interviews will be at a time and place that works for you. You may decide not to participate at any time.

The findings will be used for my thesis. I might use these finding to write an article or talk about them at lard meetings.

Potential Risks: Any risk for being involved in this study is low. Taking part in this study is your choice. You have the right to leave at any time.

It is possible that you may have some discomfort in talking about your experiences. At all times you are free to decide what you want to discuss. You can end a discussion or choose not to answer any question.
If you experience any bad feelings because of the study, here is a list of places you can visit/phone:

Saskatoon Mobile Crisis Intervention
Phone: (306) 933-6200
The Mobile Crisis Intervention Center is a 24-hour telephone counselling service for individuals who are experiencing a crisis situation in their lives. The counsellors are willing to visit individuals in their homes if it is convenient.

Mental Health Services – Saskatchewan Health Authority
Suite 145, 122 3rd Avenue North
Sturdy Stone Building
Phone: (306) 655-7777

Catholic Family Services of Saskatoon
200-506 25th Street East
Saskatoon, SK S7K 4A7
Phone: (306) 244-7773

Family Service Saskatoon
102, 506-25th Street East
Saskatoon, SK, S7K 4A7
Phone (306) 244-0127

Prairie Therapists and Trainers
910 Queens Street
Saskatoon, SK, S7N 0N2
Phone: (306) 665-6242
Toll-Free: 1-877-772-9933

Potential Benefits: Talking about your experiences of being diagnosed with a FASD or ADHD may be helpful to you. Taking part in this study may also help us better understand others who are also diagnosed with a FASD or ADHD. This may also help instructors understand students with FASD or ADHD and allow them to teach better.

Confidentiality: The information from this study will be shared with the public, but your name will be kept private through the use of a different name. This form will be kept separate from the information you give in the interview and follow-up meeting and it will not be possible to connect your name with any information you give. The interview recordings will also be known by a different name.

There is still the chance that you could be known to others because of the things you say during the interview. You can ask for parts of the interview not to be included in the thesis. At the follow-up meeting, you can look over the shortened interview and add, change, or delete any information you want.

Storage of Data: To protect your privacy, all the information from the study will be kept in a locked filing cabinet. After the study has ended, the information will be kept for five years in a locked filing cabinet in Dr. Laureen McIntyre's office. After 5 years the data will not be needed and it will be destroyed.

Right to Withdraw: It is your choice to take part in the study. You can choose to only answer questions you want. You can also ask the recordings to be turned off at any time. You can leave the interview for any reason, at any time, without punishment of any kind. If you decide to leave the study, this will not affect your access to services or your position within your school. If you leave the study, any information that that you have given will be destroyed.

Your right to remove your information will apply until you have reviewed the transcripts from the interviews and signed a data release form. After this time, it may not be possible to remove your information from the study.

Follow up: To obtain results from the study, please contact the research at the number provided. The complete study can be found by calling myself at (306) 480-6170 or by email at clp489@usask.ca or by calling my thesis supervisor Dr. Laureen McIntyre at (306) 966-5266.

Questions or Concerns: If you have any questions or concerns about the study, please feel free to ask at any time. You are also free to call the researcher at the number provided below if you have questions later.

The research project has been approved on ethical grounds by the University of Saskatchewan Research Ethics Board (Beh ID# 824). Any questions regarding your rights as a participant may be addressed to that committee through the Research Ethics Office at ethics.office@usask.ca or (306) 966-2975. Out of town participants may call toll free (888) 966-2975.

Consent to Participate: I have read and understand the information above. I have been able to ask questions and my questions have been answered. I agree to participate in the study described above, understanding that I may choose to leave this study at any time. A copy of this consent form has been given to me to keep.

_____	_____	_____
(Name of Participant)	(Signature)	(Date)

_____	_____
(Researcher's Signature)	(Date)

Appendix C

Interview Questions

Demographic

1. What is your age?
2. What is your diagnosis?
3. How old were you when you were diagnosed?

Elementary and Secondary School Experiences

4. Tell me about your school experiences between Kindergarten and Grade 12?
5. What did you like about school?
6. What did you dislike about school?
7. Was there ever a time where you considered dropping out of school?
    a. If yes, what was the reason you stayed in/returned to school?

Postsecondary Experiences

8. Are you enrolled in a post-secondary program now? Or have you been enrolled in a post-secondary program within the last five years?
9. What type of post-secondary education program are/were you in?
10. Can you describe the supports that you are/were receiving in post-secondary?
11. Aside from anything school-related can you describe any other aspects of your life that have helped you to succeed in post-secondary?
12. Can you describe any aspects of your program that make/made it difficult for you to succeed?
13. Aside from anything school-related, are there any aspects of your life that make/made it difficult for you to succeed in post-secondary?

Reflections

14. What are your future goals?
15. Is there anything else you would like to add?

Appendix D

Data/Transcript Release Form

DATA/TRANSCRIPT RELEASE FORM

I,_____, have reviewed the complete transcript of my personal interview in this study, and have been provided with the opportunity to add, alter, and delete information from the transcript and my quotations. I acknowledge that the information accurately reflects what I said in my personal interview with Cindy Powell. I hereby authorize the release of this transcript to Cindy Powell to be used in the manner described in the Consent Form. I have received a copy of this Data/Transcript Release Form for my own records.

_____	_____
Name of Participant	Date
_____	_____
Signature of Participant	Signature of Researcher

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