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INCORPORATING PSYCHOLOGICAL TRAUMA INTO ADHD DIFFERENTIALS:

A PILOT STUDY OF PRIMARY CARE PROVIDERS' PERSPECTIVES

A Dissertation

Presented to the Faculty of

Antioch University Seattle

In partial fulfillment for the degree of

DOCTOR OF PSYCHOLOGY

by

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INCORPORATING PSYCHOLOGICAL TRAUMA INTO ADHD DIFFERENTIALS:
A PILOT STUDY OF PRIMARY CARE PROVIDERS' PERSPECTIVES

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

DOCTOR OF PSYCHOLOGY

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ABSTRACT

INCORPORATING PSYCHOLOGICAL TRAUMA INTO ADHD DIFFERENTIALS: A PILOT STUDY OF PRIMARY CARE PROVIDERS' PERSPECTIVES

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According to the American Academy of Pediatrics (AAP, n.d.), 40% to 50% of individuals seeking mental health services terminate prematurely due to lack of access, lack of transportation, financial constraints, child mental health professional shortages, and stigma related to mental health. These barriers contribute to primary care providers assessing and managing mental health concerns at increasing rates, particularly symptoms consistent with attention deficit/hyperactivity disorder (ADHD). ADHD is a neurobiological disorder beginning in childhood that is defined as “a persistent pattern of inattention and/or hyperactivity-impulsivity that interferes with functioning or development” (American Psychiatric Association [APA], 2013, p. 59). Current literature shows that ADHD and psychological trauma have similar symptom presentation and influence on one another. The present study explored primary care providers’ assessment and management process for ADHD, including how psychological trauma is incorporated and barriers that primary care providers experience. Semistructured interviews were conducted with three board certified general pediatricians based in the United States who have conducted assessments of ADHD with children and adolescents. Interpretative phenomenological analysis (IPA), a qualitative phenomenological approach, was used due to its ability to emphasize and summarize the lived experiences of the participants. This research identified 10 superordinate, or shared, themes throughout the three interviews: professional identity, diagnostic considerations, aspects of assessment, factors impacting

assessment, types of treatment, factors impacting treatment, personal abilities and confidence, limitations in school training, need to self-education, and increasing access to care. The purpose of this study was to gain a better understanding of primary care providers' assessment and treatment processes for ADHD with children and adolescents, with particular interest in how psychological trauma was viewed and incorporated, and to identify perceived barriers primary care providers experience throughout this process. This research is meant to improve children's mental health by highlighting barriers in conducting evidence-based assessment and treatment of ADHD and other mental health conditions. This dissertation is available in open access at AURA (<https://aura.antioch.edu>) and OhioLINK ETD Center (<https://etd.ohiolink.edu>).

Keywords: ADHD, trauma, PTSD, primary care provider, barriers, assessment

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CHAPTER I: INTRODUCTION

According to the American Academy of Pediatrics (AAP), one in five children and adolescents has a diagnosable mental health condition requiring intervention, and only one in five of those individuals seeks out treatment with mental health specialty services (AAP, n.d.). Of the limited number that receives services, 40% to 50% terminate “prematurely because of lack of access, lack of transportation, financial constraints, child mental health professional shortages, and stigma related to mental health disorders” (AAP, n.d., p. 1). Therefore, the rate at which primary care providers have been seeing children and adolescents with emotional and behavioral concerns continues to increase. Primary care providers assessing mental health challenges may help to reduce stigma around a diagnosis, increase access to care, reduce health care costs, and increase early detection.

With primary care providers increasingly evaluating and treating mental health challenges in a primary care setting, research needs to focus on barriers they may now experience as their role in the field of mental health increases. One barrier noted in the literature is the primary care providers’ limited amount of training in mental health assessment and treatment (Flynn et al., 2015). To help increase primary care providers’ competency, the AAP created a guide titled *Addressing Mental Health Concerns in Primary Care: A Clinician’s Toolkit* (2010) that provides primary care providers with resources and screening measures. It is unclear how and if this resource was distributed to all primary care providers at the time of its release.

Due to the high rate of attention deficit/hyperactivity disorder (ADHD)-related symptoms such as inattention and hyperactivity that patients were reporting in the primary care setting, the AAP created specific practice guidelines for the assessment and treatment of ADHD

(Subcommittee on ADHD, 2011). While these guidelines address the high comorbidity and overlap ADHD has with other diagnoses, it pays little attention to the influence ADHD and trauma have on one another.

The symptoms of both attention-deficit hyperactivity disorder (ADHD) and psychological trauma emerge in similar ways, making it difficult to separate the two. There seems to be no argument in the research that early adversities affect a child's ability to concentrate; increase restlessness, behavioral outbursts, arousal, and hypervigilance; and impair the child's affect regulation. However, the high degree of overlap between the ADHD diagnosis and effects of trauma makes it difficult to accurately determine the cause of symptoms. This makes research on potential influences of psychological trauma in children presenting with ADHD symptoms critical to avoid underdiagnoses or misdiagnoses.

Following is a case study that displays some of the complex scenarios primary care providers may encounter when working with a child who has experienced traumatic events. The following case study is based out of Pakistan and magnifies the impact trauma can have on children's behavior.

A 6-year-old child with past history of cranial stenosis (Pfeiffer) syndrome and attention deficit hyperactivity disorder (ADHD) was referred to the psychiatric emergency of a tertiary care hospital in Faisalabad, Pakistan. Complaints at the presentation were worsening aggression and behavioral outbursts that had caused the patient to be picking at his sutures leading to dehiscence of the suture sites along with multiple episodes of sleep problems, increased arousal, exaggerated startle, hypervigilance, and behavioral reenactment for the past three years. Patient's mother reported that there were many times when the child lost control and there had been many spells of worsening of such behavior

especially when the child is brought to the hospital for the management of cranial stenosis syndrome. The patient had three surgeries in the past at the ages of 2, 3, and 6 years. The first surgical procedure was fronto-orbital advancements for bilateral coronal synostosis. Wound infection and septicemia developed as part of post-surgical complication and prolonged the hospital stay. The second and third surgical procedures were mainly dental interventions for overcrowding teeth. The patient was diagnosed with ADHD because of the behavioral symptoms, and he was started on the Adderall and clonidine one year ago. Parents reported no significant improvement in the psychiatric symptoms. On examination, the child was very aggressive and did not engage well in the mental status and physical examinations. We reviewed the patient's history of ADHD under the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; American Psychiatric Association, 2013) criteria and found that the child is not fulfilling the entire criteria. So, we ruled out ADHD and the history of pediatric post-traumatic stress disorder (PTSD) was taken in the light of *DSM-5* criteria, and the child fulfilled the criteria and so the management was started on the lines of pediatric PTSD. Stimulants and clonidine were gradually discontinued. Trauma-focused psychotherapy was started under the supervision of psychotherapist. Aggression episodes, hypervigilance, and sleep problems declined gradually over a period of three months. The child is no longer picking at his suture sites. Parents reported that whenever the child is brought to the hospital, there are episodes of increased arousal, but overall, the behavioral health is much better as compared to earlier. (Tahir et al., 2017, p. 2)

As in the preceding case, trauma-related symptoms, including those reflecting a diagnosis of PTSD, often present like ADHD; both result in symptoms of inattention and hyperactivity or

behavioral challenges. To ensure better treatment results, it is important for primary care providers to ensure the child meets *DSM-5* criteria for ADHD and consider other potential causes for the behavior.

An overwhelming amount of research on the overlap of symptomology in ADHD and psychological trauma, that sometimes results in a diagnosis of PTSD, exists. However, there is minimal research on the barriers primary care providers experience when trying to incorporate psychological trauma into their differential process when diagnosing ADHD. The purpose of this study is to gain a better understanding of primary care providers' assessment processes for ADHD with children and adolescents, particularly in relation to trauma, and to identify perceived barriers primary care providers experience throughout this process.

The ultimate goal of this study is to improve the medical and mental health care fields by providing the opportunities for professionals to hear the experiences and perceptions of those in their scope of practice. This research is essential to create a system that supports the primary care providers, patient, and their family. Additionally, it may help identify where the gaps in services are and provide knowledge on where and how to increase resources and access to care.

Definition of Terms

Throughout this dissertation, the terms adverse childhood events (ACEs), attention-deficit/hyperactivity disorder (ADHD), psychological trauma, complex trauma, and child traumatic stress are frequently used. For this document, the four terms are defined as follows:

ACEs are defined as traumatic events experienced by a child, under the age of 18, as “physically or emotionally harmful or threatening” (N. M. Brown et al., 2016, p. 1). Kaiser Permanente and the Centers for Disease Control and Prevention (CDC) conducted the largest

study on ACEs and found many long-term health and social problems amongst individuals who had experienced them. Many studies since have been conducted using information found in the ACEs study. Ten types of ACEs were identified in earlier research and used in the study: physical abuse, sexual abuse, emotional abuse, physical neglect, emotional neglect, exposure to domestic violence, household substance use, household mental illness, parental separation or divorce, and an incarcerated household member.

ADHD is a common neurobiological disorder that is described in the *DSM-5* as “a persistent pattern of inattention and/or hyperactivity-impulsivity that interferes with functioning or development” (American Psychiatric Association [APA], 2013, p. 59). In both the inattention and hyperactivity-impulsivity categories, six or more symptoms listed under each must have been persistent “for at least six months to a degree that is inconsistent with developmental level and that negatively impacts directly on social and academic/occupational activities” (APA, 2013, p. 59). In addition, the individual’s symptoms must have started prior to the age of 12, the symptoms must be present in at least two settings (e.g., home and school). There must be evidence that the symptoms are interfering with functioning, and that “the symptoms do not occur exclusively during the course of schizophrenia or another psychotic disorder and are not better explained by another mental disorder (e.g., mood disorder, anxiety disorder, dissociative disorder, personality disorder, substance intoxication or withdrawal)” (APA, 2013, p. 60). The professional diagnosing the individual specifies whether the presentation is predominantly inattentive, predominantly hyperactive-impulsive, or a combination of the two, as well as whether the individual is in partial remission or if current symptoms are mild, moderate, or severe.

Psychological trauma has been defined many ways throughout the years. Examples include a “stimulation that exceeds the individual’s ability to cope,” “responding to overwhelming fear,” and an “event outside the range of usual human experience” that is “markedly distressing to almost anyone” (Dalenberg et al., 2017, pp. 15, 16, 18).

Complex trauma, or complex developmental trauma, is typically defined as “the occurrence of chronic and prolonged adverse events in a child’s life that has an early onset and is generally interpersonal,” such as sexual or physical abuse, neglect, violence, and maltreatment (Conway et al., 2011, p. 61). These events can cause deficits in the child’s development and create insecure attachments with caregivers. Children may experience a psychological reaction to the traumatic experience, known as child traumatic stress. Traumatic stress can cause long-term impacts on neurological structure and functioning, impacting behavior even in young children (Siegfried et al., 2016). In addition, brain circuits can become sensitized and vulnerable to future stressors (Stahl, 2013).

PTSD is categorized as a trauma- and stressor-related disorder in the *DSM-5*. While exposure to a traumatic or stressful event is a required criterion to be diagnosed with this disorder, not all traumatic or stressful events result in a diagnosis of PTSD. Criteria include exposure to death, threatened death, actual or threatened serious injury, or actual or threatened sexual violence; persistent re-experiencing of the traumatic event; avoidance of thoughts, feelings, or external reminders; negative alterations in cognitions and mood; alteration in arousal and reactivity; symptoms are ongoing for greater than one month and create distress or functional impairment; and symptoms are not due to medication, substance use, or other illness (APA, 2013).

CHAPTER II: REVIEW OF LITERATURE

This literature review is focused on current research related to various aspects of ADHD, particularly how it relates to psychological trauma and the process of assessment and treatment in the primary care setting. Additionally, current literature on the impacts of psychological trauma is reviewed, as well as how these impacts are addressed in a primary care setting.

ADHD

As previously mentioned, ADHD is “a persistent pattern of inattention and/or hyperactivity-impulsivity that interferes with functioning or development” (APA, 2013, p. 59). ADHD has been shown to have both short- and long-term impacts on a child’s life cognitively, emotionally, socially, and academically (Lee et al., 2016).

General Prevalence, Etiology, Course, Prognosis

According to the Subcommittee on Attention-Deficit/Hyperactivity Disorder and the Steering Committee on Quality Improvement and Management (2011), ADHD is currently the most common neurobehavioral disorder of childhood. ADHD is found to affect 11% of children aged 4 to 17 years old in the United States, and 3% to 5% globally (Danielson et al., 2018; Sayal et al., 2018). Sayal et al. (2018) estimates that another 5% of children experience similar symptoms that impact their lives; however, they do not meet full criteria for the disorder. Studies indicate that the prevalence of ADHD is higher in males than in females, with an estimated ratio of 2–3:1 (Sayal et al., 2018). This ratio is lower than past estimates of 5:1. Research suggests that girls may be underdiagnosed because of the differences in expression between males and females, with females often having less hyperactivity and behavioral concerns (Skogli et al., 2013).

There is a strong genetic and environmental component for ADHD. However, the exact cause is yet to be determined. Disruption of the dopamine pathway in the brain is one hypothesis for ADHD. Studies have identified genes with polymorphisms associated with ADHD, such as DRD4 and DAT1 (Volkow et al., 2009). Additionally, environmental risk factors, such as maternal smoking during pregnancy and lead levels, have also been shown to disrupt dopamine neurotransmitters in the brain leading to symptoms of inattention and impulsivity (Volkow et al., 2009). This disruption in dopamine pathways also creates deficits with reward and motivation. More specifically, the mesoaccumbens dopamine pathway, which consists of the ventral tegmental area (VTA) to the nucleus accumbens, is hypothesized to underlie these deficits (Volkow et al., 2009). Kollins et al. (1997, as cited in Volkow et al., 2009) found that children with ADHD, when compared with nondiagnosed children, did not tend to modify their behavior when faced with rewarding conditions.

One study found that siblings of participants with ADHD had a higher prevalence of ADHD compared with siblings of those without ADHD (Biederman et al., 2013). In addition, Biederman et al. (2013) found that relatives of participants with both ADHD and PTSD were twice as likely to meet ADHD criteria than siblings of participants with ADHD alone. While multiple studies have shown a genetic component to ADHD, Biederman et al. (1995) highlights the difference between *familial* and *genetic* components. At times, disorders run in families due to familial, or environmental, components rather than genetics. Children with ADHD often come from disorganized environments with parents who also exhibit forms of psychopathology, leading to one potential cause of ADHD in children (Biederman et al., 1995).

Other factors may include exposure to toxins in early childhood, low birth rate, premature birth, brain injury, and exposure to drugs and alcohol in the womb (Siegfried et al., 2016). One

hypothesis noted in Stahl (2013) is that ADHD is due to abnormalities in circuits involving the prefrontal cortex. More specifically, executive dysfunction, including the inability to sustain attention, has been linked to “inefficient information processing in the dorsolateral prefrontal cortex” (Stahl, 2013, p. 471).

Children with ADHD are more likely to experience more long-term adverse experiences, such as increased injury rates and co-occurring disorders, sleep disturbances, as well as higher healthcare utilization (Danielson et al., 2018). The economic burden associated with ADHD is between 143 billion and 266 billion dollars a year, primarily due to health care, educational services for children, and loss of income for adults (Sayal et al., 2018). Additionally, ADHD impacts a child’s academics, relationships, behavior, and self-esteem (Fiks et al., 2017).

Co-occurring Conditions

Private practice clinicians working with children diagnosed with ADHD frequently identify emotional and behavioral problems that go beyond the core symptoms of ADHD (Conway et al., 2011). In a systematic review, Mattox and Harder (2007, as cited in Jabour, 2015) “found that children with ADHD are at a higher risk for interpersonal problems, including peer rejection, parent-child conflict, and educational functioning (i.e., learning disabilities, low graduation rates, and low grades).” In addition, higher rates of comorbid disorders and suicidality have been found; emphasizing the importance of recognizing symptoms in early childhood (Fiks et al., 2017). A study conducted by Hauck et al. (2017) highlighted the high prevalence of comorbid disorders in youth with ADHD compared to those without ADHD, including anxiety, depression, alcohol and drug abuse, autism spectrum disorder, and bipolar disorder. Researchers found that anxiety was four times more likely in children with ADHD (Hauck et al., 2017).

Trauma. Youth with trauma in addition to ADHD tend to have higher lifetime rates of almost all psychiatric disorders and the feelings children experience after trauma may exacerbate the ADHD-associated problems youth already experience at home, at school, and in social relationships (Siegfried et al., 2016). Biederman et al. (2013) found the following about the presence of PTSD in addition to ADHD:

It is significantly associated with a higher risk of psychiatric hospitalization, a higher likelihood to have repeated a grade or been placed in special classes and with poorer social functioning as measured by the SAICA [Social Adjustment Inventory for Children and Adolescents], in particular having problems with peers. (p. 81)

According to Biederman et al. (1995, 2013), ADHD precedes PTSD in youth that meet criteria for both disorders. Additionally, “research shows the potential causality regarding behaviors associated with ADHD that make children more vulnerable to abuse by caregivers as a means to deal with difficult temperaments, aggression, and misbehavior” (Jabour, 2015, pp. 16–17). ADHD has the potential to increase a child’s chances of experiencing trauma, as well as to increase a child’s symptoms after experiencing a traumatic event (Littman, 2009).

In a study conducted by Fuller-Thomson et al. (2014, as cited in Jabour, 2015), 13,054 adults (18+) were surveyed using the Canadian Community Health Survey to assess whether a correlation exists between childhood physical abuse and ADHD. The results showed that there was a seven times higher likelihood of ADHD among those who had been abused based on age, race, gender, and three types of adverse childhood experiences (parental divorce, parental addiction, and long-term parental unemployment), and that ADHD is more prevalent among adversity: high levels of poverty, parental discord, divorce, and addiction (Jabour, 2015). In addition, a chart review study conducted by Conway et al. (2011) showed that 97% of the

children diagnosed with ADHD in an urban psychiatric hospital had experienced higher rates of complex trauma, such as adoption, foster care, maltreatment, death of a parent, and witnessing violence or substance abuse in the home. Children experienced anywhere from one to six adverse events, and most began before the age of 10 (Conway et al., 2011).

Adverse experiences increase the risk for posttraumatic symptoms that may present like ADHD symptoms or exacerbate existing ADHD (Ouyang et al., 2008). Those with ADHD may have experienced traumatic events prior to a diagnosis or may experience adverse events because of symptoms related to their diagnosis. Research has shown that children who experience socioeconomic deprivation are 1.5 to 4 times more likely to have ADHD than children from less deprived families and children who experience ADHD symptoms at the age of 10 are more likely to have lower rates of employment and incomes than their peers without ADHD (Sayal et al., 2018). While some studies have not found an association between socioeconomic status and mental illness, others have found a higher prevalence of ADHD in children that live in single mother households, black children, and children who identify as “poor” (Hauck et al., 2017). Ouyang et al. (2008) found that participants exhibiting symptoms of ADHD reported more instances of neglect and both physical and sexual abuse. Inattentive symptoms were associated with each type of child maltreatment included in the study, and symptoms of hyperactivity/impulsivity were significantly associated with supervision neglect and physical abuse (Ouyang et al., 2008).

The question remains: are symptoms due to child maltreatment, or are untreated symptoms, particularly inattentive symptoms that are often diagnosed less frequently, making children more vulnerable to maltreatment by caregivers due to the lack of awareness that behavior may be attributed to an underlying condition? The close relationship between adverse

events, PTSD, ADHD, and the potential for increased comorbidity of other disorders further highlights the importance of health care professionals working with children having an appropriate protocol for differentiating between, referring out, or managing the mental health concerns of their patients. Undiagnosed PTSD in children has been shown to lead not only to mental health conditions but to physical comorbidities as well, such as chronic fatigue, fibromyalgia, and irritable bowel syndrome (Tahir et al., 2017).

Prevalence of ADHD in Primary Care

In the United States, ADHD is primarily managed by primary care providers (i.e., pediatricians and family practice physicians) and child psychiatrists (Sayal et al., 2018). Unlike in other countries, such as the United Kingdom, where multidisciplinary teams are familiar, primary care providers managing ADHD in the United States often operate in isolation (Sayal et al., 2018). A report by Albert et al. (2017) found that from 2012 to 2013, 105 per 1,000 children aged 4 to 17 years old visited their primary care providers for ADHD assessment or management. There were significantly more visits for boys than for girls; approximately 147 per 1,000 to 62 per 1,000 visits, respectively (Albert et al., 2017).

Hooven et al. (2018) found that 306 out of 5,494 patients from three general pediatric practices, or 5.6%, ages 6 to 12 years old, had a diagnosis of ADHD and were taking medication. Over a one-year span, over half the children maintained their medication regimen; however, the average number of months medications were maintained was 9.6 (Hooven et al., 2018). Over 85% of children's ADHD was managed solely by their pediatrician, and approximately 14% were seen by both their pediatrician and a psychiatrist (Hooven et al., 2018).

The need for primary care providers to assess and treat ADHD is essential due to the limitations of access to specialty care doctors such as psychologists or psychiatrists. The

Subcommittee on ADHD (2011) states that “the number of children with this condition is far greater than can be managed by the mental health system” (p. 8). However, this may be problematic due to the limited training and education primary care providers receive in assessing psychiatric conditions (Flynn et al., 2015). The need for parents, teachers, and primary care providers to receive more education related to ADHD has been noted in the literature (Sayal et al., 2018). Early detection is important due to an increase in long-term personal and economic costs for those diagnosed later in life (Sayal et al., 2018).

Assessment Process in Primary Care

It can be challenging to decipher which screening and diagnostic measures to use in primary care. According to Siegfried et al. (2016), there are few diagnostic tools to assess ADHD. It is recommended that children receive a comprehensive assessment that takes medical, educational, and psychological factors into consideration, and includes a diagnostic differential to rule out other disorders that look similar to or commonly occur with ADHD (Siegfried et al., 2016). Comprehensive assessments are often performed by specialty care providers, such as psychologists and psychiatrists. There are many screening tools that can be effective in assessing whether the child would benefit from a comprehensive assessment; however, many false-positives and false-negatives can occur when using parent rating forms due to high parental anxiety and inaccurate reporting, and there is little evidence to support the use of many parent rating forms for young children (Charach et al., 2017). N. M. Brown et al. (2016) highlighted that parents may overreport symptoms of ADHD and perceive their child’s ADHD as more severe if they are experiencing stress or have an underlying mental health condition themselves.

The AAP toolkit titled *Caring for Children With ADHD: A Resource Toolkit for Clinicians* (1st edition, 2002) promoted the use of the National Initiative for Children’s

Healthcare Quality Vanderbilt Parent and Teacher Assessment Scales (as cited in McElligott et al., 2014). In Canada, primary care providers are recommended to use the Rourke Baby Record (RBR) and ABCdaire for children under 5 years old to assess health and development, particularly the child's social-emotional functioning (Charach et al., 2017). The Subcommittee on ADHD (2011) noted that the Conners Comprehensive Behavior Rating Scales and the ADHD Rating Scale IV are scales derived from the fourth edition of the *DSM* and validated for preschool-aged children. Many of the current screening measures focus on presenting behaviors only and ignore the potential for psychosocial and environmental factors, such as exposure to traumatic stress (N. M. Brown et al., 2016). This may be problematic due to symptoms of ADHD, particularly symptoms of inattention, being associated with child maltreatment (Ouyang et al., 2008). Ouyang et al. (2008) mentions that “underdiagnosis and undertreatment of inattentive symptoms might be either a risk factor or a marker for child maltreatment” and that primary care providers working with children exhibiting symptoms of ADHD should be aware to prevent or identify maltreatment early on (p. 856).

When it comes to disruptive behaviors in young children, it can be difficult to determine normative behaviors from those that are atypical. Primary care providers often look at frequency, intensity, and duration to help identify when a child may need further monitoring, which occurs in less than 5% of preschool children in community pediatric populations (Charach et al., 2017). Practitioners should follow a bioecological framework, looking at the individual, family, and context when assessing preschool-aged children with disruptive behavior due to the complex interaction between child and environment at that age. According to Charach et al. (2017), if a diagnosis is still unclear after assessing the individual, family, and context, continuing to see the child for regular visits is the best approach to assess their behavior over several months. The

timing of referral to specialty services should be considered based on local access, length of waitlists, and the family's willingness to accept it.

Recommended Evaluation Process with Primary Care. The American Academy of Pediatrics (AAP) published clinical practice guidelines for the diagnosis and evaluation of ADHD in children and adolescents and guidelines for the treatment of ADHD in the early 2000s. In order to create the guidelines, a subcommittee representing a wide range of primary care and subspecialty groups was formed. The Subcommittee on Attention Deficit Hyperactivity Disorder, with oversight by the Steering Committee on Quality Improvement and Management, published updated guidelines in 2011 based on new research and information regarding ADHD.

The AAP guidelines focused on children aged 6 through 12 years old. New guidelines offer recommendations for children 4 through 18 years of age. A survey conducted by McElligott et al. (2014) found that most practitioners were comfortable diagnosing children between 5 and 6 years old and the majority did not feel comfortable diagnosing ADHD in children under the age of 5. The AAP notes that if primary care providers are not confident in their ability to diagnose and treat ADHD for any reason, including age, a referral should be made to a pediatric or mental health subspecialist (Subcommittee on ADHD, 2011). However, the AAP intentionally left the limits of when a primary care provider (PCP) should refer out to a specialist vague due to varying degrees of training and expertise (Subcommittee on ADHD, 2011).

Key action statements were identified by the Subcommittee on ADHD (2011) for the evaluation, diagnosis, treatment, and continued monitoring for children and adolescents presenting with symptoms of ADHD. Action Statement 1 states that primary care providers should screen for ADHD in any child between 4 and 18 years old presenting with academic or

behavioral problems and symptoms of inattention and hyperactivity/impulsivity. This is intended to reduce the rate of children with ADHD going undiagnosed or untreated.

Action Statement 2 states that *DSM* criteria should be met. This includes impairment in more than one setting and ruling out alternative causes. Information about the child's symptoms should be obtained from reports by the caregiver, teacher, other adults regularly engaging with the child, and if appropriate the child or adolescent. Following *DSM* criteria is intended to create a more uniform assessment process across disciplines (Subcommittee on ADHD, 2011).

Action Statement 3 describes other conditions primary care providers should assess that often co-occur with ADHD, such as emotional and behavioral disorders (e.g., anxiety, depressive, oppositional defiant, and conduct), developmental disorders (e.g., learning and language, neurodevelopmental), and physical conditions (e.g., sleep). The committee tasked with creating the guidelines recognized the common occurrence of co-occurring disorders with ADHD and the importance of identifying them correctly because "a coexisting condition will alter the treatment of ADHD" (Subcommittee on ADHD, 2011, p. 11).

Action Statement 4 acknowledges that ADHD is a chronic condition and that primary care providers and families should recognize that the child may have special health care needs. Longitudinal studies have found that ADHD treatments are rarely maintained, despite the increased risk for poorer long-term outcomes (Subcommittee on ADHD, 2011). The AAP also notes that parents who have an ADHD diagnosis in addition to their child may need extra support maintaining their treatment plan.

Action Statement 5 highlights the different ADHD recommendations based on the child's age. For 4- and 5-year-old children, the AAP recommends primary care providers first prescribe evidence-based behavior therapy administered by the child's parent and/or teacher. The

medication methylphenidate may be prescribed only after behavior therapy has been administered with no significant progress, and the child continues to function at a moderate to severe level of disturbance (Subcommittee on ADHD, 2011). For children 6 to 11 years old, primary care providers are recommended to prescribe both a medication and evidence-based behavioral therapy. Prescription medications should be FDA-approved for the treatment of ADHD (Subcommittee on ADHD, 2011). Primary care providers are recommended to prescribe medication first for adolescents 12 to 18 years old, and behavioral therapy if necessary. The AAP guidelines state that “preferably both” treatments should be prescribed (Subcommittee on ADHD, 2011, p. 14).

Action Statement 6 recommends primary care providers “titrate doses of medication for ADHD to achieve maximum benefit with minimum adverse effects” (Subcommittee on ADHD, 2011, p. 19). The National Institute of Mental Health (NIMH) multimodal treatment study of ADHD (MTA) found that 70% of children and adolescents responded to at least one stimulant medication when a systematic trial was used to find the optimal dosage, whereas participants seeing their regular provider received lower doses, less monitoring, and had less optimal results (MTA Cooperative Group, 1999; Subcommittee on ADHD, 2011).

Quality Issues Regarding Assessment in Primary Care. The American Academy of Pediatrics (AAP) has created these practice guidelines for primary care providers to help support them as their role increases in the assessment, diagnosis, and management of ADHD. Children with ADHD were more likely to visit their primary care providers for mental health concerns than children without ADHD (Hauck et al., 2017). However, research shows that the implementation of these practices in primary care varies significantly (Fiks et al., 2017).

There have been many quantitative chart review studies conducted on primary care providers' adherence to AAP guidelines for the assessment, diagnosis, and treatment of ADHD. Overall, studies indicate that compliance with the ADHD guidelines is poor among primary care providers (Hooven et al., 2018). Providers' self-reports of guideline adherence are often higher than studies that review patient charts. One study (as cited in Epstein et al., 2014) found that 1,374 pediatrician self-reports indicated that 78% adherence to the AAP guidelines, 55% followed *DSM* criteria, and 80% collected parent and teacher rating forms. McElligott et al. (2014) provided pediatricians with a self-report survey in which approximately 55% completed it. Results indicated that practitioners primarily followed AAP guidelines; however, not all practitioners used a standardized tool to rescreen their patients, and only 20% completed any routine testing while managing patients' ADHD (McElligott et al., 2014). A chart review study among 49 pediatricians indicated that only 20% used parent and teacher rating forms to assess for ADHD, and none used them to track progress (Epstein et al., 2014).

Hauck et al. (2017) stated that "Children are identified as having ADHD if their primary health practitioner believes them to have ADHD, regardless of how the primary care providers came to this diagnosis" (p. 400). The clinical guidelines for primary care providers do not specify a psychological report must be conducted by a psychologist in order to diagnose ADHD; however, it is recommended that primary care providers reach out to parents, teachers, and mental health professionals involved in the child's care prior to a diagnosis (Wolraich et al., 2019). Additionally, reports from a psychologist supporting a diagnosis of ADHD in the patient's chart provides additional support and protection for the primary care providers when treatments, such as stimulant medication, are rendered.

Skelley et al. (2016) examined 60 patient files from a family medicine residency program. Patients had all been identified as having attention deficit disorder (ADD) or ADHD. It is important to note that while the term ADD is still used in conversation, it is no longer listed as a diagnosis in the *DSM-5*. Symptoms of ADD can now be diagnosed as ADHD-inattentive type. Ninety-five percent of the patients had documentation of at least one ADHD symptom; however, only 45% of the patient files showed documentation of symptoms in more than one setting. In addition, only 50% of the patients were assessed for coexisting conditions at the initial appointment, of which 33.3% of patients were found to have an additional diagnosis. For those with a comorbid condition, 60% received medication for their ADHD prior to their primary care provider addressing their coexisting condition. Other recent studies suggest that primary care providers collect appropriate standardized measures for ADHD approximately 55% of the time and adhere to *DSM* criteria approximately 70% of the time (Moore et al., 2018).

There is limited information in the literature highlighting why ADHD guidelines are not followed more closely in practice. Additionally, step-by-step guides to primary care providers' assessment processes for ADHD and their diagnostic differentials could not be found through literature reviews. Studies have found that some primary care providers feel that the published guidelines for ADHD are clear and achievable; however, many primary care providers feel that they are vague and not practical (Sayal et al., 2018). Studies have suggested that limited time with patients and limited training for the assessment and treatment of ADHD are likely barriers to adhering to the AAP guidelines (Moore et al., 2018). Hinshaw and Scheffler (2014, as cited in Jabour, 2015) emphasize the point that "too many kids are identified and treated after an initial pediatric visit of 20 minutes or less" (pp. 17–18).

While research shows that primary care providers' ability to adhere to the AAP practice guidelines for ADHD is inconsistent, there are both primary care provider factors and patient factors that account for the inconsistencies (Harstad et al., 2016). Caregiver strain played a role in noncompliance from patients, a factor that should be addressed by primary care providers (Hooven et al., 2018). The literature also highlights the difficulty parents and families have in identifying the need for help and accessing services when that need is identified (Sayal et al., 2018). Other patient barriers identified in the research that hinder their ability to attend office visits with their primary care provider for ADHD management include Medicaid insurance, inattentive subtype ADHD, increased distance from the clinic, rural residence, female sex, older age, non-White ethnicity, and lower socioeconomic status (Hooven et al., 2018; Sayal et al., 2018). Intervention recommendations to improve access to care include increasing knowledge and communication among parents, teacher, primary care providers, and specialists or mental health professionals (Sayal et al., 2018).

Behavioral disorders are underdiagnosed in preschool- and school-aged children in pediatric care settings due to time constraints; lack of training in identification, assessment, and management of behavioral disorders; and limited access to specialists to refer their patients to (Charach et al., 2017). Due to time constraints on office visits, primary care providers should schedule additional appointments when necessary to complete an adequate assessment and rule out other common health disorders that contribute to disruptive behavior before ADHD is diagnosed, such as hearing, vision, feeding, and sleeping (Charach et al., 2017). This recommendation may be difficult to achieve dependent on a family's ability to attend more appointments and insurance coverage.

Many interventions have been implemented to try to improve the use of evidence based practices (EBPs) when assessing ADHD, and many of them involve increasing provider education. Primary care providers who self-reported receiving additional behavior and psychiatric training were 4.2 times more likely to utilize the AAP guidelines than those without additional training, according to a Michigan survey (Harstad et al., 2016). Fiks et al. (2017) found that setting up a quality improvement distance-learning program for primary care providers regarding the care of patients with ADHD was not very useful when there were no requirements for participation. In-person trainings that involved all staff in the office showed more significant improvement. However, while these in-person trainings can be effective, it is challenging to do this on a large scale.

Consideration of Co-Occurring Disorders. The AAP guidelines recommend primary care providers assess for other conditions that may better explain the child's symptoms or co-occur with ADHD to develop an effective treatment plan (Subcommittee on ADHD, 2011). For instance, substance abuse is common among adolescents with ADHD, so the AAP recommends primary care providers treat that prior to treating the symptoms of ADHD (Subcommittee on ADHD, 2011).

It is particularly important to screen for child maltreatment and symptoms of traumatic stress due to the high occurrence in children with ADHD. While there is limited information regarding the differential process for primary care providers regarding ADHD, a study conducted by Jabour (2015) found that the mental health clinicians they interviewed agreed that social history is the most effective way to parse out symptoms of ADHD versus symptoms of traumatic stress or PTSD. Jabour (2015) agrees that "an accurate diagnosis requires reports of impairment from home and school, and a thorough history of the child to rule out abuse or unrelated

disorders” (pp. 17–18). Four participants (80%) stated that they gather social histories through caregiver interviews, record review, treatment history, and prior evaluations. Participants also elaborated on the challenge of getting a social history within the first couple of sessions, prior to building a relationship with the child and caregivers.

Symptoms of traumatic stress are just one of the many conditions primary care providers should screen for throughout the assessment and treatment of ADHD. Children diagnosed with ADHD and co-occurring ADHD and PTSD were found to have a higher prevalence of all psychiatric disorders assessed in a study by Biederman et al. (2013), with alcohol abuse and dependence significantly higher in those with co-occurring ADHD and PTSD. One consequence to not considering other possible conditions includes ineffective treatment plans leading to less optimal long-term outcomes. Participants in a study by Jabour (2015) felt that primary care providers prescribing stimulants was an issue and that they had seen some children prescribed stimulants who had undiagnosed PTSD and for whom the medications did not work or had adverse effects. The participants who described their experience with this issue “felt that a doctor’s ability to diagnose ADHD by only looking at a checklist for symptoms may be a contributor to the misdiagnosis of children as a result of having very little background information on the child” (Jabour, 2015, p. 28).

Psychological Trauma

There are several diagnoses and conditions that are important to consider in the assessment of ADHD. In this dissertation, psychological trauma is focused upon for the sake of clarity in discussion.

General Prevalence, Etiology, Course, and Prognosis

Psychological trauma refers to the emotional, behavioral, mental, and physical impact of

an adverse event. When adverse events are ongoing, or prolonged, they are often referred to as *complex trauma*.

Kerker et al. (2015) found that physiological results of complex trauma, also known as *toxic stress*, began almost immediately in their participants as indicative of alterations in immune function and increases in inflammatory markers. One hypothesis is that “a phenotype characterized by exaggerated behavioral and biological responses to threatening stimuli” arises as a result of

stressful early experiences desensitizing the glucocorticoid receptor, which in turn enables greater outflow from the hypothalamic-pituitary-adrenocortical (HPA) axis and the sympathetic nervous system and hampers the ability of cortisol to regulate the magnitude of inflammatory responses to infection and injuries. (Miller & Chen, 2010, pp. 1–2)

Additionally, the largest study on adverse childhood experiences (ACEs) conducted by the CDC found that more than half of their 9,508 participants had experienced at least one adverse event, and a quarter of participants experienced two or more adverse events during childhood (Felitti et al., 1998). Of children 18 to 71 months old whose family had been investigated by child welfare, but the child remained at home, over 98% of the nationally representative sample had experienced at least one ACE with an average of 3.6 (Kerker et al., 2015). Each additional ACE increased the child’s risk of having a chronic medical condition and a problematic score on the Child Behavior Checklist (CBCL), a norm-referenced, parent-report questionnaire used to identify behavioral and emotional problems in children, by 21% and 32%, respectively. ACEs also increased the odds of a low socialization score on the Vineland, a tool that measures adaptive behaviors in the areas of communication, daily living skills, and

socialization, by 77% (Kerker et al., 2015). N. M. Brown et al. (2016) found that children who had experienced two or more ACEs were significantly more likely to have their parent report moderate to severe ADHD than parents of children with no ACEs.

Kerker et al. (2015) found that children living in poverty as well as with parents between the ages of 25 and 34 experienced more ACEs on average. In addition, children who had mental health disparities, chronic medical problems, and social development delays had a higher number of ACEs (Kerker et al., 2015). People who experienced four or more ACEs were 4 to 12 times more likely to experience alcoholism, drug abuse, depression, and suicide attempts, and 2 to 4 times more likely to smoke cigarettes and rate their health as poor (Felitti et al., 1998). Additionally, ACEs are linked to physical injuries in 4- and 5-year-olds, higher body mass index in children and adolescents, developmental delays, learning and behavioral disorders, and suboptimal mental health in childhood (Kerker et al., 2016).

There are many studies that acknowledge the short- and long-term impacts of ACEs. However, a 2016 study (as cited in N. M. Brown et al., 2016) revealed that approximately one-third of general pediatricians do not ask about any ACEs, and only 4% ask about all 10 ACEs. “The potential role of toxic stress and early life adversity in the pathogenesis of health disparities underscores the importance of effective surveillance for significant risk factors in the primary health care setting” (Shonkoff et al., 2012, p. 236). However, assessing for trauma may contribute to heightened stress responses in the moment. With limited time scheduled for each patient, this process could prove to be challenging if appropriate assistance and resources are not readily available.

Neurological Impact of Psychological Trauma

Overactivation of stress-mediating systems (e.g., the HPA axis) due to prolonged adverse

experiences results in excess cortisol that is damaging to the body and brain and hinders their ability to regulate during critical developmental periods (Shonkoff et al., 2012; Stahl, 2013). Both animal and human studies show that chronically elevated levels of stress hormones (i.e., cortisol) easily disrupt the developing brains of fetuses, infants, and young children due to the high level of plasticity, which allows change to occur more easily, during these stages (Shonkoff et al., 2012). Additionally, parents who are experiencing excessive stress in the home may display characteristics such as “anger, emotional dysregulation, hostility, and mis-attunement to child cues,” which have been shown to affect the developing brain of a child (Jabour, 2015, p. 11). Lipschitz et al. (2002) suggested that maltreatment in childhood causes changes in the corpus callosum in addition to three parts of the HPA axis: the hippocampus, amygdala, and prefrontal cortex (as cited in Jabour, 2015). For example, Perry (1999, as cited in Jabour, 2015) found that “fifty-three percent of 30 abused children (3 months to 17 years) had MRI scans that showed enlarged ventricles that were out of proportion to their developmental milestones and nutritional status,” leading to developmental delays and impacts on memory (p. 13).

Brain scans of those who have been exposed to chronic stress show elevated levels of glucocorticoid receptors in the amygdala, hippocampus, and prefrontal cortex (Shonkoff et al., 2012). While the hippocampus and prefrontal cortex have the ability to slow the production of cortisol when it detects too much, chronic stress reduces their ability to do so leading to changes in the size and architecture of these areas that result in deficits in learning, memory, mood control, and executive functioning, and an increase in anxiety (Shonkoff et al., 2012). Also, chronic stress has caused neurons in the medial prefrontal cortex to debranch and shrink dendrites leading to cognitive rigidity, as well as expanding dendrites in the orbitofrontal cortical neurons leading to increased vigilance (McEwen, 2017).

Chronic stress also has a negative impact on regulatory parts of the brain (i.e., prefrontal cortex), which may lead to an individual being more vulnerable to adverse events (Jabour, 2015). For instance, when the hippocampus and prefrontal cortex are altered due to adverse events and chronic stress, the brain's ability to inhibit the amygdala is compromised, reducing its ability to decipher between danger and safety and construct adaptive responses to stress (Shonkoff et al., 2012). These structural changes in the brain can produce the following symptoms/behaviors, which may be mistaken for ADHD.

Behavioral Impact of Psychological Trauma

Impairment in executive functioning is a characteristic trait of those who have experienced complex trauma as well as those diagnosed with ADHD. Executive functions include decision making, working memory, behavioral self-regulation, mood, and impulse control (Shonkoff et al., 2012, p. 236). Children with deficits in executive functioning may shift between seeking out stimulation and avoiding stimulation depending on their environment, and they may appear dysregulated, restless, hyperactive, and unable to concentrate (Jabour, 2015).

Trauma may also result in children feeling “agitated, troubled, nervous, and on alert. These behaviors can be mistaken for hyperactivity” (Siegfried et al., 2016, p. 6). Dissociation or avoidance of thoughts, feelings, and situations can look very much like inattention (Siegfried et al., 2016). The externalizing and internalizing challenges children often experience after abuse interfere with relationships, academics, and cognitive abilities in ways that closely resemble ADHD (Conway et al., 2011). In a study by Jabour (2015), participants described how children's emotions are often expressed through their behavior because of the difficulty children have with verbally expressing them, particularly those with a trauma history.

It is easy to assume a child may have ADHD if one only focuses on the behavior of the child because behaviors such as difficulty concentrating and learning, being easily distracted, appearing not to be listening, disorganization, hyperactivity, restlessness, and difficulty sleeping commonly occur in both those with ADHD and those who have experienced traumatic events (Siegfried et al., 2016). Many researchers concur that symptom overlap is high between child traumatic stress and ADHD and that there is a high risk for misdiagnosis (Siegfried et al., 2016).

Prevalence of Psychological Trauma in Primary Care

No studies on the prevalence of complex trauma in primary care could be found in the literature. However, a few studies were identified that reviewed the prevalence of PTSD in a primary care setting. The Primary Care Anxiety Project, multisite study of 1,500 participants, found that 12% of patients met *DSM-IV* criteria for PTSD (as cited in Gillock et al., 2005). Other studies were similar, with researchers identifying patients in a primary care setting that met full or partial criteria for PTSD at a rate of 11% and 2%, respectively (as cited in Gillock et al., 2005). According to Langhinrichsen-Rohling et al. (2017), PTSD is common in primary care settings with a prevalence rate ranging from 9% to 23%; however, the diagnosis often goes unidentified due to it being poorly understood, lack of awareness around it, discomfort related to diagnosing, and lack of training to treat trauma among healthcare teams.

Trauma responses often occur on a spectrum, ranging from an adaptive response to a diagnosis of PTSD (Gillock et al., 2005). Studies have found that partial PTSD, or subthreshold PTSD, is still associated with significant impairment and help-seeking behaviors (Gillock et al., 2005). Results of a study conducted by Gillock et al. (2005) indicated that adult patients in a primary care setting that were identified as meeting partial and full criteria for PTSD had significantly more medical visits throughout the study, more severe physical symptoms, and

poorer health functioning regarding physical pain, role limitations, general health perceptions, and overall physical functioning than those without symptoms of PTSD. Both PTSD and partial PTSD symptoms in children can be expressed “through difficulty sleeping, change in eating habits, clinginess, avoidance, emotional numbing, and reenactment of the traumatic event through repetitious play” (Jabour, 2015, p. 6). Factors that contribute to the development of PTSD “include the duration of the trauma, severity of the traumatic event(s), gender, age, and social support” (Jabour, 2015, p. 6).

Trauma Assessment in Primary Care

Diagnosing children with PTSD is challenging due to the rapid developmental changes throughout childhood, lack of verbal skills, and limitations of parents and caregivers as accurate observers and reporters. According to the Siegfried et al. (2016), developmental age should be considered when assessing for traumatic experiences in childhood. This consideration should include many symptoms, including but not limited to “high-risk behaviors, family environmental factors, functional impairments, and trauma reminders and triggers, as well as their time of onset” (Siegfried et al., 2016, p. 7). A child’s strengths, ability to access resources, and resilience should also be assessed to ensure that children and their families can follow through with the recommended treatment plan. Information should be gathered through clinical interviews with the patient, caregivers, teachers, and other providers; standardized measures; and behavioral observations (Siegfried et al., 2016). Ongoing assessment is essential because symptoms can change based on the child’s developmental level and environmental changes (Siegfried et al., 2016). Due to the complexity of symptoms and fluctuation through the child’s development, multiple diagnoses are often given, and the potential for misdiagnosis is high, mainly when trauma is not assessed (Siegfried et al., 2016).

The Hospitalized Child and Adolescent Trauma and Psychopathology (HCATP)

Questionnaire is one method to assess a broad range of traumatic experiences in a child's history. It assesses adoption/foster placement, homelessness, witnessing violence, witnessing domestic violence, being a victim of violence, sexual or physical abuse, maltreatment/neglect, death of a parent/caregiver, death of other significant family member, parent/caregiver incarceration, and parent/caregiver substance use (Conway et al., 2011). Additionally, the Child Trauma Screen (CTS) was found to be "a promising measure for rapidly and reliably screening children for trauma exposure and PTSD symptoms"; however, more research is needed to determine the reliability and validity of the measure as well as parent comfort with their child regularly being screened for trauma exposure during visits with their primary care providers (Lang & Connell, 2017, p. 390).

A study by Jabour (2015) looked at mental health clinicians' perspectives on differentiating between ADHD and PTSD. Two participants (40%) mentioned the pressure to diagnose children within the first few sessions to ensure it is covered by insurance, making differentiating, or ruling out between similar diagnoses, difficult. Diagnoses can have a significant impact on the life of an individual. Therefore, diagnosing can take time, particularly regarding a PTSD diagnosis in children, because there is a wide spectrum of trauma responses and a significant overlap in symptomology with other diagnosis such as conduct disorders, depression, dissociative disorders, and ADHD. For example, traumatic stress as well as ADHD can present as difficulty concentrating and learning, being easily distracted, appearing not to be listening, disorganization, hyperactivity, restlessness, and difficulty sleeping (Siegfried et al., 2016).

Recommended Evaluation Process for Primary Care. The AAP does not have specific guidelines regarding the assessment, diagnosis, and treatment of symptoms related to psychological trauma. They do however have a general guide for assessing mental health titled *Addressing Mental Health Concerns in Primary Care: A Clinician's Toolkit* (AAP, 2010). This guide contains a document called the *Mental Health Screening and Assessment Tools for Primary Care* (AAP, 2010) that lists various screening measures and their psychometric properties that are appropriate for use in pediatric primary care settings with children from birth to 21 years old. It includes tools to assess a child's "global functioning, common symptoms seen in primary care, such as anxiety, depression, inattention and impulsivity, disruptive behavior or aggression, substance abuse, learning difficulties, and symptoms of social-emotional disturbance in young children" (AAP, 2010, p. 1). Also, tools may be used to identify a child's psychosocial environment prior to exposure to trauma, assess the impact of a traumatic event, and check for trauma-related symptoms in children as young as 3 years old.

The AAP (2010) purposefully included screeners that have sensitivity and specificity levels of 70% to 80%, lower than typically acceptable, in order to identify children that do not meet full *DSM* criteria but may still benefit from interventions in a primary care or community setting.

In addition, The AAP has created resources such as *Bright Futures*, *Connected Kids*, and *The Pediatrician's Role in Child Maltreatment Prevention*, which provides recommendations primarily focused on preventing ACEs in a primary care setting; however, "implementing a comprehensive, yet practical program of effective anticipatory guidance that nurtures the child's emerging social, emotional, and language skills and promotes positive parenting remains an ongoing challenge" (Committee on Psychosocial Aspects of Child and Family Health et al.,

2012).

Quality Issues Regarding Assessment in Primary Care. While there is an increasing need for primary care providers to assess and treat mental health conditions, including trauma-related conditions, “very little is known about effective approaches to address trauma in this setting” (Flynn et al., 2015, p. 7). A literature review revealed some of the barriers primary care providers face when assessing trauma-related symptoms including limited training, limited time, and insufficient pay for the time spent with each child and their family (AAP, n.d.; Flynn et al., 2015). To assist with the additional time needed to assess children who may be at risk for adverse events or mental health concerns, procedural code 99401-4 is recommended (Committee on Psychosocial Aspects of Child and Family Health et al., 2012). However, insurance companies are very specific about when these codes may be used and may not always reimburse the provider, discouraging its use. Therefore, “continued advocacy at the national and state levels is needed ... to ensure proper payment for the time needed for universal screening, problem identification, and ongoing assessment” (Committee on Psychosocial Aspects of Child and Family Health et al., 2012, p. e227).

Trainings, which have been shown to have a positive impact on study outcomes, have been implemented to help primary care providers increase knowledge, attitudes, confidence, and competence around childhood traumatic stress, as well as improving connections with outside resources (Flynn et al., 2015). Even with additional trainings and protocols put in place over the past decade, many primary care providers still struggle with screening, referral, and connecting with outside resources (Committee on Psychosocial Aspects of Child and Family Health et al., 2012).

Treatment of ADHD and Psychological Trauma

According to Siegfried et al. (2016), there are no established treatment recommendations for children who experience both traumatic stress and ADHD. It is possible that reducing the symptoms of ADHD first may allow the child to focus more as they begin their trauma treatment (Siegfried et al., 2016). However, both must be addressed during the assessment process in order to find the appropriate treatment regimen.

Interventions for ADHD and psychological trauma can differ considerably. If a child is misdiagnosed, clinicians and primary care providers may use a treatment modality that is ineffective or even harmful (Jabour, 2015). Children experiencing toxic stress have increased levels of adrenaline, a hormone that increases rates of blood circulation and breathing, particularly in times of stress, and norepinephrine, another stress hormone that influences blood pressure, heart rate, attention, and arousal. The goal is to reduce the levels of these neurotransmitters in order to restabilize their systems. However, these neurotransmitters can be further increased when treated with stimulants which are traditionally used to treat ADHD symptoms by increasing dopamine levels. A systemic review conducted by Weinstein et al. (2000, as cited in Jabour, 2015) found that children who are misdiagnosed with ADHD instead of PTSD and put on stimulant medication may find that the side effects such as difficulty falling asleep, lack of appetite, irritability, headaches, nausea exacerbate their PTSD symptoms. This is an important factor to consider due to stimulants being the first-line treatment for many practitioners (McElligott et al., 2014). Contrary to this, the MTA study found that “children with ADHD with and without anxiety improved similarly in the domains of ADHD symptoms and ancillary (internalizing) problems” (MTA Cooperative Group, 1999, p. 1094). Therefore, when anxiety is the primary concern in addition to ADHD, or the symptoms of anxiety appear to be

due to the child's ADHD, medication may prove to be effective.

In a study conducted by Albert et al. (2017), stimulant medications were mentioned at 80% of visits for ADHD from 2012 to 2013 for children 4 to 17 years old. Instead, clonidine, a second-line medication used mostly for young children with ADHD, reduces the release of norepinephrine and has also been proven successful in treating traumatized children (p. 2). Additionally, guanfacine, an FDA approved medication to treat ADHD, has also been shown to decrease symptoms of anxiety and hypervigilance (Strawn & Keeshin, 2019).

A nationwide survey found that children who experienced greater levels of socioeconomic deprivation were more likely to be prescribed medication for their ADHD (Sayal et al., 2018). Similarly, a study looking at school-aged children reported that children in the lowest income bracket had higher rates of ADHD compared to children in the middle income bracket. However, some studies from the United States did show more ADHD diagnoses in higher income families (Sayal et al., 2018). When insurance was considered, the research showed that stimulant medications were prescribed to 1.3% of children without insurance, 3.4% of children with private insurance, and 4.3% of children with public insurance (Sayal et al., 2018). Countries who have universal healthcare report an association between deprivation and higher ADHD prescription rates (Sayal et al., 2018). More research is needed to determine the relationship between socioeconomic status (SES) and rates of ADHD as well as medication adherence.

Although the AAP recommends a combination of medication and behavioral interventions for school-aged children with ADHD, a chart review conducted by Epstein et al. (2014) found that the majority of patients received medication to treat their ADHD symptoms; however, very few received any kind of psychosocial treatment (Moore et al., 2018). In a study

conducted by Harstad et al. (2016), approximately 58.3% of their participants under 6 years old with ADHD were currently seeing a therapist or were recommended to see one at their follow-up visit, and 44% above the age of 6 were receiving therapy services or had it recommended. These numbers appear to be low based on best practices for the treatment of ADHD.

According to a study out of Canada, the first-line treatment for children with disruptive behavior is training parents in parent training programs to help them shift their current patterns to more effective ones (Charach et al., 2017). Psychoeducation, as well as parent training, can still be effective for parents whose children may be at risk for developing more disruptive behavior. Additionally, Charach et al. (2017) highlighted children should not be prescribed medication until after an evidence-based behavioral intervention has been attempted. Programs such as Triple P (Sanders, 1999) and Incredible Years (Webster-Stratton, 2005) are evidence-based programs for children with disruptive behaviors; however, not all families benefit solely from these programs and may need additional support (Charach et al., 2017). Children who do not respond well to behavioral interventions may have a more severe behavioral disorder, comorbidity, or misdiagnosis, or they may be experiencing problems in their environment, including adverse childhood events (Charach et al., 2017). Stroh et al. (2008, as cited in Jabour, 2015) examined parents' knowledge, attitudes, and informational sources regarding ADHD and found behavioral interventions were strongly preferred over stimulant medication. Even so, the amount of stimulant medication continues to rise. According to Hinshaw and Scheffler (2014, as cited in Jabour, 2015), one in five boys and one in ten girls in the United States are told they have ADHD by the time they are 17 years old, and 70% of them are prescribed stimulant medication. In addition, in some parts of the United States, ADHD medications are prescribed more than what is expected based on epidemiological studies suggesting that children who have

subclinical deficits may be treated for ADHD (Sayal et al., 2018).

Generally, more than one intervention is needed in the treatment of ADHD. According to Siegfried et al. (2016), the treatment of ADHD should include parent and child education about the diagnosis, behavioral therapy, mental health counseling, parent training, educational program modifications, and medication. Mental health counseling may help the child and family address issues related to strained relationships, self-esteem, discipline, parenting concerns, and any other issue related to ADHD that causes distress for the child and family (Siegfried et al., 2016).

Group sessions in a primary care setting have been shown to be effective. Bauer et al. (2017) conducted the first study on group visits for ADHD in a primary care setting and found that both patients and providers benefited from the experience. Patients and their families were able to connect with others going through similar experiences, and providers were able to monitor peer interactions, observe medication wear-off, and learn even more about their patients' experiences by hearing their stories (Bauer et al., 2017). Groups were run by mental health professionals as well as primary care providers after receiving a short training. This model helps address the need for more psychoeducation provided parents, children, and primary care providers. It also increases the child's contact to their primary care provider and mental health professionals since the general practice in pediatric care is to only see the child approximately three to four times per year for medication management (Hooven et al., 2018).

In a study conducted by Skelley et al. (2016), results indicated that education geared toward primary care providers was needed regarding the evaluation of coexisting conditions in addition to an ADHD diagnosis, as well as long-term management of ADHD and behavioral therapy as a first-line treatment for children under 6 years old. If a child is not appropriately assessed and treated for their ADHD, they may experience failures with their academics, conduct

problems, strained relationships, increased depression, and substance abuse (Siegfried et al., 2016). Additionally, if trauma symptoms are not identified, and behavioral problems are associated exclusively with ADHD, “the child’s self-esteem may suffer” (Jabour, 2015, p. 19).

Children whose trauma symptoms have not been identified may be treated with multiple medication and therapies that end up being ineffective (Siegfried et al., 2016). Also, there is little research on the impact of medications for children with symptoms of traumatic stress (Siegfried et al., 2016). Therefore, if trauma symptoms have been identified, primary care providers should ensure they pay close attention to side effects and increase the amount of follow-up appointments for medication management. Resources available to the child and family, such as transportation and finances, should be considered throughout the decision-making process. Outside of medication, several effective treatments for trauma have been established. Many of them include the promotion of routines that provide a sense of safety, teaching stress management and relaxation skills, talking about the traumatic events when appropriate, looking at thoughts and perceptions around the event, and teaching children to better regulate emotions, behaviors, and reactions to thoughts or feelings surrounding the traumatic event (Siegfried et al., 2016). Untreated childhood trauma may impair healthy development. It has the potential to “change the structure of the child’s brain, alter the nervous system, and deplete a child’s capacity to bear ordinary life stresses” (Siegfried et al., 2016, p. 9). This creates long-term impacts on a child’s memory, attention, behavior, and emotional and social life.

Studies indicate that children with ADHD experience more disruptions in their early attachments, which are not addressed in common treatments for ADHD (Conway et al., 2011). The high comorbidity of attachment trauma and ADHD impedes a child’s ability to understand others’ behavior in order to adapt and be flexible in their environment. “The assumption that

ADHD in children is a largely neurocognitive disorder has often neglected the underlying emotional, personality, and interpersonal issues from which many ADHD afflicted children suffer” (Conway et al., 2011, p. 63). According to Fonagy and Target (1998, as cited in Conway et al., 2011), affect regulation, impulse control, self-monitoring, and having self-agency are necessary for children to understand their experiences. Children with ADHD have also been found to have deficits in these areas, which are not addressed in behavioral or pharmacological therapy. Psychoanalytic and psychodynamic therapies have been shown to help children with ADHD find meaning in their own as well as others’ behaviors, in addition to targeting past experiences and long-standing emotional disorders (Conway et al., 2011).

Research has shown that parents of children with ADHD experience increased levels of stress, more dysfunctional attachment styles with their children, and higher rates of separation or divorce from their spouse than parents of children without ADHD (Conway et al., 2011). Furthermore, ADHD is known to be passed down genetically, indicating that at least one parent and possibly other siblings will have ADHD as well (Littman, 2009). This means that parents of children with ADHD may themselves struggle with routines and limit-setting that may impair the child-caregiver attachment or result in high emotional reactivity when their child misbehaves that increases the potential for verbal, emotional, or physical attacks toward the child (Littman, 2009). This disruption in attachment, higher rates of stress, and increased parental separation have the potential to create more adverse experiences for the child. A study conducted by Hooven et al. (2018) found that over 57% of the 21 parents interviewed reported that their child’s ADHD created strained relationships within the family and disruptions to their schedule.

Many child psychologists and psychiatrists feel that due to the high overlap, children with ADHD should be conceptualized from an attachment or trauma lens (Sayal et al., 2018). That is

not to say that symptoms are contributed to one or the other; moreover, it is often that ADHD and psychological trauma co-occur. For instance, according to Wozniak et al. (1999, as cited in Littman, 2009), children diagnosed with ADHD who have experienced trauma had more impaired psychosocial functioning than either children with ADHD who had not experienced trauma or children without ADHD that had experienced a traumatic event. Even with the high rate of co-occurrence, according to Sayal et al. (2018), this idea has been neglected in the research.

CHAPTER III: METHODOLOGY

Research Design

An exploratory qualitative study was conducted to gain a better understanding of primary care providers' assessment processes for ADHD with children and adolescents, and to identify perceived barriers primary care providers experience throughout this process. This research is meant to improve children's mental health by highlighting barriers in conducting evidence-based assessment and treatment of ADHD and other mental health conditions. Most research conducted in this area has been quantitative, resulting in information about the number of primary care providers who adhere to the AAP guidelines, but little information about why they do or do not adhere to them.

Interpretative phenomenological analysis (IPA), a qualitative phenomenological approach, was the designated research method. A qualitative phenomenological methodology was chosen for this study because it captures the lived experiences of participants regarding a phenomenon, often through the use of interviews. Phenomenology has become increasingly popular in social and health sciences and includes a strong philosophical component (Creswell, 2013). This method was first developed by Husserl in the 20th century, and it focuses on the commonalities, or the essence, of participants' experiences (Creswell, 2013). Initially, Husserl felt that researchers should "bracket" their assumptions and biases in order to focus solely on the phenomenon. However, this proved difficult to do, and Heidegger argued that our pre-existing knowledge cannot be ignored and that we cannot identify the essence of a phenomenon while remaining neutral or detached. Instead, he suggested the use of interpretation to understand a phenomenon and created his own approach known as hermeneutic, or interpretative, phenomenology (Sloan & Bowe, 2014). In all interpretative methodologies, the term *reflexivity*

is often used to describe a researcher's process of being cognizant and reflective about how their methods and examinations may impact the data (Sloan & Bowe, 2014). What was once more a philosophical approach has more recently become a well-known qualitative methodology in the field of psychology.

Interpretative phenomenology places an emphasis on language and examines text to identify meanings and themes. What differentiates this from descriptive phenomenology is the additional interpretation and rewriting of themes once the "what" and "how" of the experience has been identified (Sloan & Bowe, 2014). According to Smith et al. (2009, as cited in Oxley, 2016), interpretation may elucidate aspects of the experience that participants find complex or difficult to convey.

IPA

IPA is a relatively new methodological approach that focuses on how people make sense of their lived experiences. It was derived from phenomenology, hermeneutics, and idiography (Oxley, 2016). The goal of phenomenology is to describe a lived experience; hermeneutics is the theory of interpretation, and idiography focuses on the individual (Charlick et al., 2016). Oxley (2016) explains, "At the core of IPA is an intention to understand the whole by looking at the part, but in order to understand the part the researcher also needs to look closely at the whole" (p. 57); this phenomenon is also known as the hermeneutic circle. IPA does not intend to reduce preconceptions about the phenomenon but instead places more emphasis on the lived experiences of the participants (Oxley, 2016).

IPA was chosen for this study because it allowed for the summarization of experiences of primary care providers who treat children with symptomology associated with ADHD and psychological trauma. As Charlick et al. (2016) explain, "IPA allows broad-based knowledge to

be contextualized within a social and cultural context, producing relevant findings” (p. 205). It allowed the researcher to identify the essence of the phenomena associated with the incorporation of psychological trauma into the assessment of ADHD for children and adolescents. Additionally, the researcher interpreted those phenomena to provide a richer research picture of the assessment, diagnosis, and management process, in addition to potential barriers primary care providers face throughout this process. Due to the small sample sizes used in research utilizing IPA methodology, it is difficult for the results to be generalized to the larger population. Instead, IPA can be used to further examine existing research and provide more in-depth information on a particular aspect.

Participants

Samples in IPA are homogeneous, “they represent a perspective, rather than a population,” and participants were selected purposively (Oxley, 2016; Smith et al., 2009, p. 49). Therefore, participants included a convenience sample of primary care providers in the United States that provide services to children and adolescents who have attention and behavioral concerns. Due to the extensive analysis in IPA research, the focus on a phenomenon in a particular context, and the emphasis on quality over quantity, sample sizes are often small. Creswell (2013) stated that sample sizes may range from 3 to 15, while Smith et al. (2009) suggest four to ten interviews for a doctoral-level project using IPA. This study included three participants, all of which were board certified pediatricians in the United States. See Table 3.1 for participant demographics.

Table 3.1*Participant Demographics*

Participant identifier	Gender	Type of primary care provider	Years in practice	State of training	State of current practice	Type of practice
P1	Male	Board certified general pediatrician	34	Virginia	Washington	Training program & teaching; Private practice; Community clinic
P2	Female	Board certified general pediatrician	12	Georgia	Georgia	Outpatient clinic part of larger healthcare system
P3	Female	Board certified general pediatrician; Board certified child abuse pediatrician	36	Texas	Washington	Community clinic

Inclusion/Exclusion Criteria

Inclusion criteria for primary care providers were as follows: working in private practice or with an organization; board certified pediatrician, family practitioner, or primary care physician; and treats children with ADHD. ADHD did not have to be the primary focus of treatment but must have been addressed at some point throughout treatment. Participants were not excluded due to factors such as race, ethnicity, sex, gender, age, or socioeconomic status.

Outreach and Recruitment

Participants were recruited in a few ways. Referrals were accumulated through colleagues

and the dissertation committee. Snowballing, where participants provided referrals, was utilized. Emails were also sent to leaders in the health care community to distribute throughout their organizations.

Participant Risks

Being interviewed about how psychological trauma is incorporated into the assessment, diagnosis, and management process for ADHD potentiates some risks. Participants may experience stress, anxiety, strong emotions, or fear of reprimand from their community or licensing board from sharing their stories. They may be worried that the study will reflect negatively on their experience or profession. Concerns about confidentiality and the privacy of their clients may also arise.

Participant Benefits

Participants may enjoy contributing to research that addresses barriers they face in their field. For some, they may see this as an opportunity to connect with other primary care providers who have similar experiences. This study provided primary care providers with the opportunity to advocate for their patients as well as their profession. Additionally, patients seeking treatment from primary care providers related to the concerns addressed in this study have a better understanding of the assessment process, training, and education primary care providers utilize to help meet their needs.

Participant Protection

The researcher obtained approval through Antioch University Seattle's Institutional Review Board (IRB) prior to conducting the study. Participants received an informed consent that highlighted participant rights, potential risks, benefits, and what to expect as a participant. Verbal consent was obtained prior to participation in the study. Participants were notified that

they would be able to remove themselves from the study at any time, and they could withhold information that they are not comfortable sharing. Audio recordings were password protected on a secure computer or external device. Participant names and organizations were replaced with pseudonyms known only by the researcher to protect confidentiality. All identifying information was removed from the transcript or replaced with a descriptor or pseudonym.

Data Collection

This study used a multimethod approach to collect data. After gathering demographic information, the participant was asked to read one vignette and directed to describe how they would assess the patient. All symptoms described consisted solely of those identified in both ADHD and psychological trauma literature. Each participant received the same vignette so that the researcher could draw meaningful conclusions from the data collected.

Vignettes have been identified as a valid and reliable method to use in both qualitative and quantitative research to explore phenomena, particularly in social, behavioral, and health sciences (Evans et al., 2015). According to Evans et al. (2015), a vignette design can be an ideal method for exploring the decision-making process of health care professionals. A vignette is “not intended to re-create real-world situations ... rather, they are designed to approximate, isolate, manipulate, and measure key aspects of the decision-making processes that individuals use in real-world situations” (Evans et al., 2015, p. 164). Vignettes offer a unique look into participants’ perceptions, beliefs, and meanings about a phenomenon.

The second method used to collect data was a semistructured interview. IPA studies frequently use semistructured interviews to allow participants to give in-depth accounts of their experience. The semistructured approach provides space for both structure and flexibility to change or omit questions as needed, based on the participant’s account (Oxley, 2016). Interviews

are often viewed as “a conversation with a purpose,” and are informed by the research questions (Smith et al., 2009, p. 57). This study used an interview schedule to allow the researcher to set a loose agenda and identify topics they would like to address with the participants. The researcher made notes throughout the interviews to track assumptions and biases they brought into the interview that potentially influenced its direction, a beneficial strategy utilized in IPA research.

This study included semistructured interviews with primary care providers via video conference due to differences in location. The researcher and participant were each in private offices throughout the interviews. According to Smith et al. (2009), interviews should include six to 10 open-ended questions that encourage the participant to talk at length, with prompts if needed, and last from 45 to 90 minutes. This study had eight open-ended questions, not including the gathering of demographic information, and interviews lasted 45 to 60 minutes.

Data Analysis

Interviews were transcribed verbatim, with nonverbal utterances such as pauses, sighs, and laughter in brackets. Interviews were transcribed as the interviews were completed, and the researcher focused on the meaning of words and phrases as they reviewed the transcripts. IPA captures the lived experiences of participants; however, the result is an interpretation of what the researcher thinks about that meaning. While the creators of IPA encourage analysis to be personal and unique for each study, Smith et al. (2009) offer a data analysis guide that is particularly helpful for those new to IPA.

Step 1 began with reading and re-reading the transcript. During Step 2, the researcher began to comment on and note anything of interest. Initial comments were more descriptive and stayed close to the participant’s explicit meaning. However, deepening the level of interpretation and looking at the context and language the participant used helped the researcher begin to

identify patterns of meaning. As the researcher continued to make notes and interpret the transcripts, they shifted into Stage 3 and began to recognize themes emerging. It is at this stage that the researcher broke the interviews into smaller parts and reorganized the data, the other half of the hermeneutic circle. Step 4 included charting and mapping the themes based on how they fit together. Smith et al. (2009) provided examples for how to identify patterns and connections between themes: abstraction, polarization contextualization, numeration, and function. This research primarily utilized abstraction in this study, the process of putting like with like. Steps 5 and 6 involved repeating this process for each interview and then looking for patterns across all three interviews.

CHAPTER IV: RESULTS

The analysis resulted in several recurring emergent themes. These recurring emergent themes were then grouped into 10 superordinate themes: professional identity, diagnostic considerations, aspects of assessment, factors impacting assessment, types of treatment, factors impacting treatment, personal abilities and confidence, limitations in school training, need to self-educate, and increasing access to care. Superordinate themes were recognized when at least two out of the three participants discussed related emerging themes throughout their individual interviews. Emerging themes that fall underneath each superordinate category will be discussed below. Themes are discussed in no particular order.

Participants incorporated psychological trauma into various parts of the assessment process, including discussion related to comorbidities, currently behavior and frequency, as well as life circumstances.

Professional Identity

The first superordinate theme identified was professional identity. This theme is made up of participants discussing demographic information and the patient population they have or are currently working with. It is important to note that participants were specifically asked about demographic information for purposes of the study. Regarding patient population, participants were asked about areas they specialize in as well as how often they work with children and adolescents in practice. However, more participants than not chose to expand on this topic. The study resulted in one male and two female participants who had been practicing as general pediatricians for 12 to 36 years. One participant had an additional specialty board certification to assess and treat children who have experienced abuse. Participants received their training in different regions of the United States; one in the Southeast, one in the South, and one in the

Northwest. While one participant is currently licensed in a Southeastern state, the other two participants are licensed in the Northwest region of the United States. Specialties and interests varied, including, “health service delivery for underserved populations and those with complex health conditions” (P1), “love my well child checks” (P2), and “I attract a lot of ... complex medical kids ... so, kids that have multiple medical problems” (P3). This information was included in the study to help identify whether type of primary care provider, experience, or specialty impacted their assessment process.

Diagnostic Considerations

The second superordinate theme identified is diagnostic considerations. Emerging themes that fall under this category are rule-outs, comorbidities, and age as a factor. RxList defines *rule-out* as a “term used in medicine, meaning to eliminate or exclude something from consideration” and a *comorbidity* as “the coexistence of two or more disease processes” (Davis, 2021; Stöppler, 2021). Additionally, age as a factor relates to primary care providers considering specific diagnoses over others due to age, as well as focusing on certain areas, such as substance use or learning disabilities, throughout the assessment due to the patient’s age. Two out of the three participants discussed varying disorders they like to rule out when assessing children and adolescents with symptoms of ADHD.

Rule-Outs

“If they’re struggling with depression anxiety, they gotta tell me” (P2). Participant 2 discussed the impact of mental health disorders such as depression and anxiety impacting primarily adolescents’ ability to pay attention.

Additionally, both Participant 2 and Participant 3 felt that learning disorders should be ruled out before diagnosing ADHD because the treatment may differ and their ability to

understand may be impacting their ability to pay attention; “I don’t want to miss a learning disorder and throw other medications away and they have a learning disorder. I don’t want to miss a development disorder and put them on medication” (P2). Participant 3 added:

Learning disabilities of course is a big one because if you can’t learn, you can’t pay attention ... what is this kid’s cognitive abilities? Is she on level for um, you know, if you don’t understand what people are saying and you can’t communicate, then you’re going to be distracted because why would you pay attention? (P3)

Lastly, quality of sleep was emphasized by Participant 2 and Participant 3, who stated it may play a large role in children’s and adolescents’ attention and behavior:

Then I ask about sleep routine That’s a really big issue. Because some of these kids who are adopted or came from, um you know, very inconsistent household are poor sleepers. They don’t nap well, they don’t go to bed well, they’re up all night. So, you have these kids who don’t sleep well, and I say hey, that could play a role with this too. They’re running on over-tired; they’re not sleeping well; they’re not going to pay attention. They’re going to be hyper and poor acting out behavior. So, I tease out sleep. (P2)

Participant 3 had similar ideas: “Sleep disorders is a big one because if you are not getting enough rest then you’re not going to pay attention” (P3).

Comorbidities

The second emerging theme under diagnostic consideration was comorbidities, discussed by Participant 1 and Participant 2. While the conversation was similar to rule-outs, these were conditions primary care providers spoke of as occurring in addition to ADHD, including the impact of psychological trauma. Participant 1 shared:

This may indicate that there’s other types of trauma reactions that she’s having, other types of, perhaps comorbid, you know, uh, psychiatric conditions that she might have also ... anxiety disorder, OCD, you know, uh, there could be a variety of things. But it wouldn’t necessarily preclude the diagnosis of ADHD, it could just be comorbid. (P1)

Another comorbidity that arose was sleep disorders: “and then there’s always the comorbidity. Sleep is a major issue. So, trying to manage the sleep. Especially in this kiddo

that's been having difficulty" (P1). Lastly, Participant 2 identified the issue of a developmental delay that may be present in addition to inattention and hyperactivity. "If they're flagging me for some developmental issues too, you're not just a kid who's inattentive and hyperactive you're also delayed? That's different ..." (P2).

Age as a Factor

The final emerging theme under diagnostic considerations is age as a factor. All three participants discussed the impact a child's or adolescent's age may play in the symptoms they are presenting with, diagnoses the primary care providers may consider, and questions that may be asked throughout the assessment process. "It tweaks a little bit based on age and based on what's going on with them" (P2). One way in which age was discussed was the increase in complexity with adolescents. "I think it gets a little bit more complex with adolescents in that, um, you know, especially now-a-days, with the skyrocketing increase in prevalence of depression and anxiety in most adolescents" (P1). Additionally, Participant 2 shared:

Now this 15-year-old, I'm going to focus more on, alright, I need to talk to him in private, alright, substance use, you know. Alcohol, drugs, you know, peer pressure. What's going on there? You know depression, anxiety, blah blah blah. So, the teens are much harder. (P2)

There is an assumption that adolescents who may be presenting with symptoms of ADHD have already had testing by that age to rule out learning, developmental, and cognitive disabilities. "Hopefully by adolescence we have more of the cognitive stuff figured out but sometimes no. It's like, you know I had a, one of my own kids got diagnosed with a learning disability their junior year in high school" (P3).

With many children and adolescents, particularly the younger ones, symptoms of ADHD are common and "very frequently" seen (P1). When symptoms are frequently seen in children with and without ADHD, it is important to determine whether symptoms are outside the realm of

normal childhood behavior and whether symptoms fully meet diagnostic criteria. “We need time to tease out whether she has ADD/ADHD. She’s just six and she’s just starting school and she’s got all these other factors too” (P2).

Aspects of Assessment

The third superordinate theme is aspects of assessment. Multiple emerging themes fell under this category including measures used throughout the assessment process, patient’s current behavior and frequency of that behavior, life circumstances that may be impacting the patient, the primary care provider’s routine medical assessment, and the need for follow-up appointments. Primary care providers focused on the inclusion of psychological trauma into the assessment process when discussing current behavior and frequency of behaviors, in addition to past and current life circumstances and stressors.

Measures Used

All three participants discussed measures that they utilize to help gather more information when ADHD is suspected. Every participant stated that they use the Vanderbilt Assessment Scales to gather more information about the patient’s behavior from both parents and teachers. “If there’s any concerns for inattention, hyperactivity, those things, Vanderbilts are automatic” (P2). “Here’s some Vanderbilt scales for the parents and teachers and if you can get these filled out and bring them back let’s ... do a little further digging into those symptoms and what’s going on” (P1). The Vanderbilt scales help primary care providers gain more knowledge of the severity of symptoms, while determining if the symptoms are occurring in more than one setting (i.e., home and school). Participant 1 stated that they use the Vanderbilt “because it’s the one that I’m most familiar with” (P1). However, Participant 1 and Participant 3 also acknowledged other measures that may be helpful throughout the process; “We’re going to do the Vanderbilts” and if

the child is old enough “what do you call the computer thing that we have for kids ... CPT [Continuous Performance Test]? Yeah, CPT” (P3). The CPT is an additional measure that specifically focuses on attention-related problems for those 8 years and older (Conners, 2014).

Participant 1 stated:

I haven't been in a regular practice for a while where, for example, certain other measurements to measure uh, you know, your ACEs score or other types of measurements for little kids that would, uh, that may indicate another diagnosis ... like using the PHQ [Patient Health Questionnaire] testing. (P1)

Although other measures were mentioned, the Vanderbilt was the primary tool utilized by participants, and the only for some; “so all I use for this is the Vanderbilts” (P1). However, Participant 1 emphasized the importance of acknowledging that “the Vanderbilts also aren't, you know, it's only just a tool to use” (P1). It is important to include the other aspects of assessment as well.

Current Behavior and Frequency

All three primary care providers discussed the second emerging theme under aspects of assessment, the patient's current behavior. Participant 1 stated:

Depending on what information I get from them about all this, um, I would probably go into a little bit more detail about her, the concerns they have about her behavior at home, in school, and with friends and peers. And in those areas, how they think that she's functioning and wanting to really figure out how, where she is developmentally Is this something you all have noticed since she was three until now or is this something that has gotten worse? (P1)

Participant 2 also discussed behavior: “Then, um, I also ask now about school ... now tell me, what has the teacher been saying about her behavior at school? Then we tease out what the teacher's saying” (P2). Additionally, primary care providers wanted to know not only what behaviors the patient was experiencing but also the frequency of the behaviors and how long the patient has experienced them. For instance, Participant 1 shared what they were looking for

throughout the assessment:

Looking for more of a kind of like consistency of behavior rather than kind of episodic behavior depending on the situation If she displays this behavior in certain settings but not other settings This may indicate that there's other types of trauma reactions that she's having I would say that, um, if the child is suffering from some type of PTSD or something from a reaction, then that would also be something that may be seen not as consistently. (P1)

Participant 3 had similar thoughts: "You definitely would want to know if this is new behavior or if this is behavior that has been the whole three years the family has had this child" (P3).

Life Circumstances

Taking the patient's past and present stressors and life circumstances into consideration throughout the assessment process was important to all three participants. This is where participants incorporated psychological trauma into their assessment process. Participant 1 stated:

For myself, I have seen where a child who is stressed and experiencing traumatic experiences, ACEs I guess if you would, but that's where I have seen behaviors mimic like developmental delay, mimic ADHD, different things they're in crisis mode. So, they display all different kinds of behaviors. (P1)

Additionally, Participant 2 stated:

I want to ask is there things you thought may have triggered it. Was there a stressful moment? Did you all move to a new home after you adopted her? Did you all have a new sibling, you know? Was there a death in the family? You know, I'd tease out stressors there to see if that played a role. (P2)

Participant 3 also contributed on this topic: "Do you have any kind of structure in or out. I mean sometimes you can just see family and you can see why there's problems. You know?" (P3).

Participant 3 considered other life circumstances:

If I've got six kids in a house and either two parents trying to work or even one parent trying to work, I've got, you know this kid over here who's got a lot of attention and school problems and how much support are they getting ... and even nutrition. So, do you have the basics? (P3)

Participants all recognized that current life circumstances and stressors may cause the child to display symptoms of ADHD. Additionally, two out of the three participants identified past events in a child's or adolescent's life as potentially contributing factors to their current behaviors. After being asked if there was anything else he would include throughout the assessment process, Participant 1 stated "whether there was any factors she may have experienced in her past that may lead to her displaying certain behaviors that she's displaying here" (P1). Participant 3 went into detail about specific things that she may consider if the child from the vignette participants read walked into their office:

Well, maybe this baby was born to a methamphetamine addicted mom, she was removed from the hospital, she was placed with this family day of life 3. They had her as a foster family. Maybe the parents had visitations, maybe they didn't. Maybe mom could never get her act together and off of drugs. Maybe this baby came straight out of the hospital to this family, they've had her since birth, they just the first three years of state of whatever was trying to give the parents a chance to get clean and take parenting classes and prove that they could get their baby back. And maybe this child has never had contact with the birth mother, that's a different situation. I mean yes, she had maybe the drug effects of being drug addicted during the pregnancy. But after that, after she was in a loving, caring, stable home. That's very different than if she was in a home with domestic violence, or maybe she was abused, physically, sexually, who knows. Neglect, starved, a million things could have happened that all of the state found out and removed this kid. You know it takes a year, minimum, to get rights terminated. Where was she during that time? Yeah, it's going to make a big difference. (P3)

Medical Assessment

Primary care providers always gather past and current medical history as part of their assessment process. Participant 1 stated:

I think the first thing that I would do is ask a little bit more of past medical history for her. Just, uh, what they know of her medical history both before she was adopted and since she's been adopted ... and that would be just kind of looking for any general medical history but also any type of possible medical conditions or symptoms which may indicate a reason why she may be displaying this type of behavior. (P1)

Participant 2 gave some examples of medical conditions that may impact a child's attention and behavior:

Some kids have asthma that's uncontrolled, some kids have terrible eczema and itch all night long and don't sleep well, and therefore poor attention, some kids snore ... so this is where I start teasing out an order. I have like my step-wide brain order. So, one is I'm saying what's past medical history, what medical problems does the child have? And, Amber, really a lot of times people are like oh they're healthy, they're fine, but you have to tease further because parents don't always realize. So, you say, ok have they ever had to get a breathing machine or use an inhaler? Oh yeah, we have a breathing machine at home we have an inhaler they use that off and on a few times a year. Oh? Has anyone ever told you the word asthma? ... I also say ok, well what about hearing and vision? They do hearing and vision tests at school. Does it seem like she can't see well or hear well? Um, because that can often times be an issue as well. (P2)

Lastly, Participant 3 stated that they would do "just general medical history. Does she have any medical conditions? Does she have any other medicine besides her melatonin" (P3)?

Necessity of Follow-Ups

The last emerging theme under aspects of assessment is the necessity of follow-ups. Each participant brought up the importance of follow-up appointments to gather all of the necessary information required when assessing children with attention and behavioral concerns. Follow-up appointments are needed "always. I mean, we've got to go ... we got to plan an evaluation" (P3).

Participant 1 added:

Say for instance, that child was the first time I saw them, and they came in for a checkup and that's the presenting complaint. Then I would gather some information about that and then would schedule a follow-up to do a longer type of evaluation. (P1)

Participant 2's statement concurred on this point: "I tell them when I want to see them. I make them schedule their appointments on their way out" (P2).

Factors Impacting Assessment

Throughout the discussion about the assessment process, participants not only talked about the different aspects of their assessment process, but factors that impact that assessment process, leading us to our fourth superordinate theme. Factors that emerged included assessments being time consuming, barriers when using measure throughout the assessment process, and

information being limited or unknown.

Time Consuming

All three participants shared the amount of time gathering all of the pieces of information takes when assessing children and adolescents with attention and behavioral concerns.

Participant 3 stated:

Time is always a barrier. For the families and for the providers because it does take a period of time and multiple visits. We try to make it into two or three. The initial visit, the CPT, and the follow visit. That's still three visits. (P3)

Participant 1 responded similarly: "Gathering information, is just time ... time and resources.

That's the big issue" (P1). It is important to keep in mind that many primary care providers initial appointments range from 15 to 30 minutes. Participant 2 was able to create their schedule in a slightly different way and still believed there was too little time:

Just that if we could all have more time. More time. Yeah no, really. Cause these things are complex and take a lot of time ... I like to have a reduced schedule, so I have more time for my patients. My partners are not as fortunate. They have to, they might be the single income in their house, I'm fortunate I have my husband so I can scale back my schedule and allow more time. If that were not the case, if I did not have my husband's income, I would not have dedicated time for this. I would have to knock this out in about a 20-minute visit. New patient 20-minute visit are you kidding me? I can't even brush the surface in 20 minutes I don't even get it all done in my forty-five minutes to an hour that I spend, and you know not many people can spend an hour for a visit. There's no way in the pediatrician world you can do that ... so these visits take me a long time and obviously you know barrier number one is time ... time, time, time. I spend with new patients alone; I spend thirty to forty-five minutes ... with new ADHD, new I'm concerned about ADHD behavior you're looking at forty-five minutes to an hour. (P2)

Measure Barriers

While all three participants discussed the use of measures, additionally, they all shared barriers that they experience when attempting to utilize the measures throughout the assessment process. Participant 1 stated that they only had access to measures regularly when they were in a practice setting, versus working in other types of organization, such as shelters and educational

settings:

I haven't been in a regular practice for a while where for example certain other measurements to measure uh you know your ACEs score or other types of measurements for little kids that would, uh, that may indicate another diagnosis ... like using the PHQ. (P1)

Another barrier regarding measures included the accuracy of reporting from teachers and parents. "The parents often are saying like high level inattention, not sitting still, so parents are usually giving me a lot of those higher number scores and the teacher's maybe not as much, so I always look at both together" (P2). Different people in the child's life may have different perspectives about the child, the child may behave differently in each setting, or the perspective of the parent or teacher may be skewed. As Participant 2 shared:

The teachers are going to notice the ones that act out more. What about the quiet, poor focus ones who go unnoticed ... so, you can tell sometimes on some of those things how the teacher really, if a teacher's got 20 to 25 students, how much were they able to hone in on this particular student's particular needs, right. (P2)

Lastly, when measures cannot be completed during an appointment, it can be challenging to have parents and teachers return the measures in a timely manner. Participant 3 stated:

Getting information from school is sometimes difficult. Depending on how much trouble the teacher is having with the kid, you know? Some of the teachers are so happy to be able to tell somebody about all the trouble they're having with this kid. Oh my gosh the parent finally took them to the doctor. They'll fill out the Vanderbilts and write me a big, long thing. So, if the teacher's having a lot of trouble, it's easy. High school is a lot harder because we have multiple Vanderbilts to get from the school and teachers ... we'll get the Vanderbilts to them for teachers and parents. Then the ball is in their court. I would say there is a significant percentage of people that drop the ball on getting Vanderbilts back. (P3)

Information Limited/Unknown

The third emerging theme under factors impacting assessment was information being limited or unknown throughout the assessment process. "Barrier two is historians. Right?" (P2). All three participants have had this experience with parents and families in their practice.

Participant 2 shared:

So, I have a dad bring a kid in sometimes. Stereotypically speaking, the dad's going to go, I don't know the mom just sent me here, he just acts out a lot. So, I don't know. Sometimes there's a lot of poor historians. Or adoptive parents. I don't know birth history, I don't know her history prior to age three, I know nothing. So, a lot of that I can't gather a whole lot of history, I just have to take what I got. (P2)

Specifically related to the vignette used in this study, Participant 3 stated:

This whole vignette is leaning to what happened to her in those first three years of life. And maybe we can find that out and maybe we can't. You know, maybe we get no records. What happened to this kid? We just know her first home wasn't viable. You know, we don't know if she was in six foster homes before this or if she was just removed because parents got into drugs and this family is the foster family and they adopted her ... you'd want to know if any of her past medical history's available before adoption. You know, sometimes you get nothing, you have no idea. (P3)

Participant 2 went on, "So, I'm going to say how much do you all know about her birth information and the first three years of her life? And as they answer those questions, hopefully they know something" (P2). Additionally, Participant 1 stated, "the other thing I would do is try as best as I can to get a developmental history. Which they may or may not know from before she was 3 years old" (P1). Regarding past factors Participant 1 would want to know "depends on how much information was available" (P1).

Participant 2 emphasized the importance of asking very specific questions to help parents answer to the best of their ability:

I'm actually going a step further to help jog people's memories because they often times forget ... really a lot of times people are like oh they're healthy, they're fine, but you have to tease further because parents don't always realize ... you gotta say all of the medical words and the laymen words to try and tease out these things. (P2)

Types of Treatment

The fifth superordinate theme identified throughout the study was types of treatments primary care providers utilize with patients experiencing symptoms of ADHD. Emerging themes included medication as treatment, mental health as an intervention, and treatment based on

specialists' recommendations.

Medication as Treatment

All three participants identified medication as one treatment method they may utilize in their practice with children who experience attention or behavioral concerns. One reason for medication use is that "it's much more readily available to get a medication" (P1). It is also the quickest form of treatment in more emergent situations, as Participant 1 describes:

If it's a crisis ... then it certainly will press me to try to do whatever I can for that child ... if it means prescribing, even if I think oh this child has ADHD I'm not sure if also there's developmental delay, whether there's ASD, whether there's something else, but, let's do a trial of stimulants to see if, if this will stop this family from being thrown out of shelters. (P1)

Another benefit of medication use is that it increases the rate of patients following up and continuing care. Participant 2 shared:

If I write them a medication, and I say hey I will not refill this unless you come to my office You know, so those we have a little better compliance with the ADHD medicine, the depression, anxiety, Zoloft appointments. (P2)

However, if a patient comes in only seeking medication, it is important to gather more information, as Participant 3 stated:

You come in here and tell me you've been on Adderall. I won't do it just on their word, you know. I want to see a prescription bottle or if they can't do that, tell me what pharmacy you got it at, let me call ... the only kids that I'll treat without an evaluation like that is if they come to me already diagnosed and already on medication and they're doing well. So, so and so came to me, he got diagnosed a couple weeks ago, he's taking Vyvanse, blah blah blah, this is his dose, it matches his weight, ok then we'll just continue on if he's doing well. (P3)

Participant 2 and Participant 3 emphasized that while medication is often brought up by parents throughout patient appointments, they will "talk to the parents about whether or not medication is indicated ... medicine is a separate thing. We'll look at that when we need to. Let's talk about the attention problem" (P3). Participant 2 added:

A lot of times they'll ask me about medicine and say this and that. I'll spend a lot of time explaining what the medicines do and how it can help but it's not the only solution I'm going to say, um, cause they always want medicine right? so I'm going to say, medicine's a piece of the puzzle, right, you can help kids who might have signs of ADD/ADHD, I say but, we have all these other things that can play a role I would rather refer, wait for your report, and then you guys give me the a-ok that everything is good, start them on some meds. (P2)

One difference between psychiatrists and primary care providers prescribing medication was noted by Participant 1:

You know across the board it's been my experience that, uh, child and adolescent psychiatrists, tend to use a wider range of medications and often higher doses of stimulant medications than general pediatricians do I see, from my experience from a medication perspective, that people in primary care are hesitant to push doses of medications because they're just, it's kind of like, oh that dose seems to work, we seem to be okay doing that. And he seems to be doing better so let's just leave it there. (P1)

Lastly, Participant 1 brought up a topic that has been controversial in the literature. They stated that in their experience, ADHD often contributes to anxiety and that stimulant medication may be beneficial to manage both:

For example, somebody who's anxious, and they're kind of this anxious person that has all of these, you know, invasive thoughts of, you know, oh that will never work, and oh my God, what about this, and all this flooding of thoughts and ideas in their head about all the different things that could go wrong, and how, so that they just become overwhelmed with the spinning in their heads ... and, you know, that can sometimes be similar to a little kid that is sitting in a classroom and is constantly distracted by new voices and sounds and sights and people and all these different things going through. So, stimulant medication, actually may, treat those types of kind of distracting thoughts the same way that it treats the distractions that are other sensory stimuli. (P1)

Mental Health as an Intervention

Each participant reiterated the importance of making sure the patient is connected to mental health services when they display symptoms of ADHD, particularly behavioral concerns. This was the second emerging theme under types of treatment. "There are all kinds of these behavioral interventions that have been found to be effective with kids with ADHD, especially younger kids" (P1). "One thing is I would like everybody to be connected with counseling ...

anybody that I diagnose with ADHD. I try to get them to have counseling also” (P3). Specifically speaking about the child in the vignette, Participant 3 stated:

She still needs to, just because of these behaviors. Whether we think it’s ADHD or not, she still needs to be in therapy, so, she still needs to be connected with some place so these parents can start working on these behaviors. (P3)

Participant 2 also added to the topic:

Automatically she’s going to win herself a psychology referral because she’s going to be one that’s going to need some counseling, because family counseling, counseling, because some of this I’m going to say hey, she came from a different environment birth to three years of age and now in a different environment. Coping skills, adjustments, all that puts stress on kids, and they don’t know how to process. So, in all of my puzzle piece fixing, I’m going to say we need to start you guys on family therapy, behavioral therapy to start working through that aspect of the piece of the puzzle. (P2)

Some primary care providers stated they are comfortable with beginning an additional treatment in addition to referring the child and family to counseling. At times, primary care providers did not feel comfortable beginning any type of treatment until they had a more complete assessment. Participant 2 shared more about this process:

So I’m in with this kid, I’m going to say first things first, behavioral counseling, family therapy and all that. And then, let’s see if these things do not improve and whether or not we need to consider if she has um, so the other thing I do is refer to psychiatry to then tease out whether there’s a learning difficulty there, an underlying developmental disorder, or um something else that’s playing a role with her behavior, with her asocialness, things like that If it’s very simple and straight forward I’m like alright, I can take care of you. But anybody more complicated than that, they’ve got behavioral issues, they, you know, poor sleep issues, they are, you know, struggling in school, and blah blah blah I want you guys [psychology] to do a full report I rely a lot on you guys still because I don’t want to miss something. I don’t want to miss a learning disorder and throw other medications away and they have a learning disorder. I don’t want to miss a development disorder and put them on medication. (P2)

Treatment Based on Specialist Recommendation

The third and final emerging theme under types of treatment primary care providers identified was treating a child based on what a more specialized professional recommended. All three primary care providers talked about deferring to the mental health professional’s

recommendation, when possible, regarding patients with symptoms of ADHD. “I don’t know, you know, I kind of defer to them [psychiatrists]” (P1). Participant 2 added:

I rely a lot on you guys still because I don’t want to miss something. I don’t want to miss a learning disorder and throw other medications away and they have a learning disorder. I don’t want to miss a development disorder and put them on medication. I would rather refer, wait for your report, and then you guys give me the a-ok that everything is good, start them on some meds ... even when I read your full reports, I’m like, I understand half of these questionnaires that you just did and all the results. I’m looking for your summaries, I’m looking for, you know, your end points when you’re telling me what to do. Because even though I’m learning more, I don’t know all those different scales and tests and things that you all do ... I don’t know that. I don’t know EMDR and all the different, you know, behavioral therapies out there that they’re doing now. And biofeedback and this and that, so I’m like uh, sure, whatever psychology and psychiatry recommend, go for it. (P2)

Additionally, Participant 3 works more closely with a behavioral health team in their office and will cancel patient appointments with the primary care provider if behavioral health feels another aspect of the child’s symptoms should be looked into further before a treatment plan is discussed. Participant 3 stated:

If they’re going to come to me, sometimes they will actually cancel my appointment if BH says this kid has a learning disability and we won’t go through with ADHD until we have the school test them. Then they’ll write a letter to the school and say hey we recommend ... and it’s hard sometimes because a teacher may be pushing to get kids tested for a disability in school ... but, if a letter from a psychologist comes and it’s signed by them and me. So, sometimes they’ll say hey I just cancelled your appointment, if you can just sign this letter, we’re sending him to get learning disability testing. (P3)

Factors Impacting Treatment

Like assessment, the discussion regarding treatment included factors that impact primary care providers’ ability to create a treatment plan and patients’ ability to follow through with the treatment plan, the sixth superordinate theme. Emerging themes that fell within this category were lack of follow up, parent or family impact on treatment, limited access to mental health, and multiple factors to treat.

Lack of Follow Up

Two out of three participants shared that the lack of patients scheduling or keeping their follow-up appointments is a barrier to treating patients, particularly when assessing for ADHD, due to multiple appointments being needed for the evaluation process. Participant 2 shared:

Barrier number three, right? I tell them when I want to see them. I make them schedule their appointments on their way out. How many of them actually keep that appointment? There's the tricky part, cause, unbearably you know, I don't want to deal with all these referrals. Too many appointments. I don't want to see Dr. back in a month, nothing's changed from what I told her a month ago. Why do I have to see her back in a month, right? So, so for these kinds of appointments, a lot of times you can have them lost to follow up. Which is sad ... and who am I? I don't know my schedule a month from now to say oh where'd so and so go off my schedule from a month from now. (P2)

Additionally, Participant 3 stated:

There is a significant percentage of people that drop the ball on getting Vanderbilts and making their follow up appointment. If I'm super concerned about them, I'll put a tickler in and have [behavioral health] call them if we haven't gotten stuff back in like three weeks ... but I don't chase down every one of them. If they're coming in with concerns and I give them their test to do, and it drops then I'll probably hear from them again in a year when the teacher's, or in six months, when the teacher's on them to do something. (P3)

Parent and Family Impact on Treatment

All three primary care providers had multiple comments regarding parent and family impact on treatment, the second emerging theme under factors that impact treatment. Participant 1 stated:

I think there's a lot of fear. There's fear amongst people who have been especially traditionally disenfranchised, marginalized, um, there's a lot of fear that they can't trust people to say if your child needs this or that. I think that's true, and I think that there's a lot of misinformation from the other end of the socioeconomic spectrum. (P1)

This may lead to families being hesitant to follow treatment recommendations or not seek help at all. Participant 1 added:

There is a much higher percentage of untreated ADHD out there than there is over treated ADHD. And I really, I feel like I've run across parents and kids that have been suffering

for a long time. From misinformation and reluctance to use medication that could be indicated. And it's prolonged trauma and prolonged suffering and led to kids experiencing more and more failure. Which has decreased their self-esteem. Could be leading to more anxiety. So, I feel like that is what I encounter more so. (P1)

Participant 3 shared another way parents may impact treatment:

Some of these parents, you know this is adoptive parents so I can't blame them for the kid having ADHD. But if birth parents, if the kid has ADHD the parents may too and if they can't get their act together. (P3)

This may result in the child not receiving the proper treatment. "Parents are [also] hoping they can fix it at home with this this and this. So, they're coming in and it's usually pretty significant by that point. By the time they're sharing about it" (P2).

Once parents do make it in to see a professional, there are new challenges that arise.

Participant 2 stated:

Most parents are like oh my gosh just fix my kid. It's not that easy ... you've got two adoptive parents who hear me yap yap yap and they're overwhelmed. 'Cause now I'm telling them that there's not a quick fix for this 6-year-old girl. (P2)

Primary care providers will then identify all factors that may be impacting the child or adolescent and attempt to address each one. Having multiple factors to address can be overwhelming and "for some families, one more thing is just not possible" (P3). Exercise is sometimes encouraged; however, Participant 3 shared the challenges with treatment recommendations such as these:

Even though there's a lot of places we can do things free, like the YMCA, you know how does my family with their multiple kids and long work hours, how do they get their kids to something extracurricular, you know? It just doesn't always happen ... like I said, this person is home with six kids, how do you take your kid to counseling? Really? You know your six-year-old, what do you do with your other kids? Maybe you have one old enough that you can leave them at home for an hour while you take your kid to counseling, but probably not. You probably have a three-year-old, and two-year-old, and one-year-old, and you got to haul all these kids with you to the counseling place. It's just, there's a lot of stuff that gets in the way of kids attending counseling ... we've got social work, we've got BH, we've got people too. But there's only so many hours in a day for people to work full time and some people are just more creative than others With my kids it's not financial which you know when I was in Texas and I had an eighty percent private, a lot of times it was financial. Families just couldn't afford to go to counseling. These kids

they don't have to pay, they just have to get their butts there. (P3)

Then, families do begin treatment that was recommended, and other issues may occur as

Participant 2 highlighted:

By the time my kid gets in the parent is like, I didn't like that person. Or my kid was uncomfortable with that counselor. I don't like them ... and I'm like oh great, we finally just got you in after four months, and now you don't like that person. Now I've got to find you someone else to get in with. So, there's that too. Cause females want the female counselor and males want the male counselors, and we can't always coordinate that. (P2)

Limited Access to Mental Health

The third emerging theme that impacts treatment is the limited access to mental health, which was discussed by all three participants. Every participant stated the importance of patients with behavioral or attention concerns to be connected with counseling; however, they also discussed the barriers in that coming to fruition. Participant 1 stated:

The problem is [behavioral interventions] are just not available to the vast majority of people, and they're expensive, and they're difficult, or insurance doesn't cover it, or it's just, it's a nightmare trying to get those types of behavior interventions for kids. (P1)

Participant 2 added:

I would love to give these kids to you guys that are experts at that ... but again, I've had so many kids over the years that have more and more trouble getting in ... psychiatry and psychology are overwhelmed and can't get it ... as much as I want ya'lls help, ya'll are bombarded. My kids can't get in with you guys for months and months at a time. (P2)

While each participant agreed that they would prefer to have a mental health professional assess patients with attention or behavioral concerns, there are many barriers, and they often feel that they are left to treat symptoms of ADHD on their own. Participant 1 shared:

Sometimes that really will happen [treating for ADHD when there may be something else going on also], but mostly because depending on the amount of access people have to other mental health and developmental evaluations ... you have to refer out to people and if you have a population that's primarily Medicaid there aren't too many places you can refer to, or there's waiting lists, or it's just extremely difficult. (P1)

Each participant reiterated that there are too few mental health professionals accessible to their patients, and the ones that are available are often full. “Like everywhere else in the world there’s a limited supply of psychiatrists for kids and all of my schizophrenic kids need to be seeing them” (P3). Therefore, Participant 1 stated that you must “rely heavily on the school” for additional support throughout the assessment and treatment of patients with symptoms of ADHD.

Multiple Factors to Treat

The fourth and final theme that emerged under factors impacting treatment was that there are often multiple factors that each require attention, not just the behavioral concerns or inattention. Two out of the three participants identified the challenge of attempting to treat multiple factors at once. Participant 1 stated:

The complex ones like this girl alone you’ve got multiple factors here. So many, um, from the fact that she was adopted and there’s stuff going on in her past to how’s it been in her current life to all these pieces of the puzzle that I have to sit and tease through ... we need time to tease out whether she has ADD/ADHD. She’s just six and she’s just starting school and she’s got all these other factors too. (P2)

Additionally, “sleep is often a major issue in children presenting with these symptoms so managing that as well is important” (P1).

Personal Abilities and Confidence

Primary care providers discussed having limited abilities or confidence when left to assess and manage children and adolescents with attention and behavioral concerns. This created the seventh superordinate theme: personal abilities and confidence.

Limited Abilities and Confidence

There was only one theme that emerged and that was the limited abilities and confidence discussed by all three participants. Participant 1 shared:

Very often I'll go wow, I think this kid has ADHD and you know, as a general pediatrician, we don't have a whole lot of developmental diagnosis that we ourselves or psychiatric diagnosis that we ourselves can make. Just based on our own ability. (P1)

Participant 3 added:

I have done a lot of specific CME [continuing medical education] in trauma focused care because um, because of this population that I'm taking care of now and I had no clue about what can I do ... I never did it because I didn't want to, and I didn't feel like I knew very much about it. (P3)

Not only did primary care providers feel that their own ability to assess and treat mental health conditions was lacking, their comfort level and confidence in providing accurate and effective assessment and treatment was as well. "I mean, it's extra trouble and I see why a lot of people don't want to mess with it. A lot of people don't feel comfortable" (P3). Participant 2 added:

Even though I feel like I've gotten more experience in the past five to seven years, I still feel like I know very little. I still don't feel very confident, I guess. I'm very confident in my well child checks, my vaccine information. All the stuff I do day in day out bread and butter, all the time, confident. I can give you all the information. ADD/ADHD, anxiety, depression, even though I'm doing it more it's one I still don't feel as comfortable with, okay ... so, I don't feel confident because I feel like [the field] just keeps growing and more and this and that. I don't know how to stay on top of [mental health], on top of all my other stuff I deal with ... I only am comfortable with Zoloft because it's ancient and old ... and I know its side effects profile, but there's a million other antidepressants out there, millions. And so, I'm like ok, well what happens if they don't do well on that? I'm like I just stick with Zoloft. (P2)

Limitations in School Training

The eighth superordinate theme, limited mental health training throughout their education, was brought up by all three participants and contributes to the limited abilities and confidence they feel when attempting to assess and treat patients with behavioral, attention, or other mental health concerns.

Limited Training

This was the only emerging theme that fell under the superordinate theme of limitations

in school training. While all three participants shared that their training was limited, the amount received throughout their education varied based on the period they entered medical school.

Participant 1 shared about his training experience:

If you go back to medical school and residency, what was known about ADHD when I was back, way back, 35 years ago, I began residency in pediatrics, and the only drugs available at that time were methylphenidate, which was only available with Ritalin and then Dexedrine. Those were the only medications available. And, um, and at that point in time, general pediatricians or any primary care doctor was not equipped to make the diagnosis. It had to be made by a developmental specialist, or psychiatrist, or somebody like that ... so it was just not in the purview of general practice, general pediatric practice, or family medicine. (P1)

Regarding trauma, Participant 1 continued:

there was no association of trauma in childhood back then. I mean there was sexual abuse, physical abuse, neglect, that type of classic trauma. But not a lot that I learned as you know like symptoms and manifestations of that experience I haven't been trained to treat trauma. (P1)

Even 15 years later, the training was still reported to be minimal by Participant 2:

If I was just like whatever, then I would know nothing. Honestly ... because I didn't get any of it in training ... minimal during training. Right? Literally minimal. They teach just the basic brush of what ADD/ADHD looks like, basic brush of Vanderbilt forms, basic brush of referral to psychology/psychiatry ... all I know is Adderall and all I know is start here on the XR5 and have a good day ... here's Zoloft and start of 25, have a good day. That's all I would know because you get very little training. I'd be like, do Vanderbilts. Ok, your Vanderbilts look positive ... here's you some Adderall XR 5, bye see ya. That's what I would do. (P2)

While all participants agreed that training on mental health in school was minimal,

Participant 3 felt that more may not be needed:

You get some training in your general residency. it's a little bit. And for some people, if they're going to be a pediatric gastroenterologist, they never need to know anything else about ADHD. So, I wouldn't necessarily advocate that you put more training into general pediatrics about something that's this specialized. Because even some general pediatricians are not going to write controlled substance prescriptions, they're not going to take care of these kids, they're going to refer them all out. (P3)

Need to Self-Educate

The ninth superordinate theme is the need to self-educate based on the patient populations they see and the limited training received throughout their education.

Self-Educate Based on Needs

Due to the limited knowledge participants had about ADHD and trauma after completing their education, all three participants reported the need to engage in self-education based on the needs of the patients they were seeing. Participant 3 stated:

I have done a lot of specific CME in trauma focused care because um, because of this population that I'm taking care of now and I had no clue about what can I do ... and there is a ton of education out there on anything I want to learn about, any topic in the world. Whether I want to go do it live, back in the day, or whether I want to do it online, or whether I just want to read. And so, I have certainly done extra training on ADHD. (P3)

Participant 1 added:

All of my learning with ADHD has come from continuing education courses, both in person and at conferences, or online as new medications are, arise. Reading journals, journal articles that review ADHD evaluation and medication and so forth. So, you really, you have to keep up with things; otherwise, you'll be treating people the other way. (P1)

Additionally, participants shared the various ways they have engaged in self-education. From webinars, reading, and in-person trainings to learning from colleagues and even mental health professional, participants pulled information from anywhere they could to help increase their ability to treat the patient population that was walking through their door. Participant 2 shared:

So, if I didn't do it on my own, asking my partners who are more experienced than me, reading up on my own things, I'd be like uh, all I know is Adderall ... I got to branch out here, so, I bought that [psychopharmacology] book so that I can start learning more [medications] on top of this because I feel like I'm dealing with it more and more ... now, along the way, I've learned there's way more to this than just Vanderbilts, Adderall, and Zoloft. Like, I got to go more into this. So, um, so a lot of learning has happened in the past five to seven years for sure. (P2)

Participant 1 added:

A great way, that I have learned, is from referrals to psychiatrist and other developmental specialists. And they treat one of your patients, come back, and you go like woah, what did they use this for? What is this all about? And then you call them or ask them, and you say like I've never heard of this, and you look it up. (P1)

Lastly, the AAP provides educational resources to primary care providers as Participant 2 shared:

They probably have heard from pediatricians saying we need support there. So, I feel like over the past few years I've seen more and more come out about ADD/ADHD, anxiety, depression, how to manage, um, webinars, things like that ... AAP sends me stuff every single day and what I do is that I skim through it. And before, I would be like ugh ADHD stuff I don't even want to read that. Honestly, right? But now, I'm like I need to read that because I need to be on top of this because I'm dealing with this. (P2)

Increasing Access to Care

The tenth and final superordinate theme is the need to increase patients access to mental health care. Two emerging themes appeared, primary care providers as front-line mental health workers, and integrated care.

Primary Care Providers as Front-Line Mental Health

Two out of three participants shared their experience of realizing that access to mental health did not come easy for many of their patients, and that they, the primary care providers, were then responsible for assessing and treating patients with mental health concerns. Participant 2 stated:

So, in training they just barely tell you about stuff and I just think ok I'll just talk to psychology and psychiatry, and they'll help me take care of it so I can manage all the other stuff in the clinic. But now, you know, ten years later, totally different. Totally different now, because we are the front lines ... they [AAP] say in their things, more and more pediatricians are front line for mental health disorders. More and more pediatricians need to be able to manage ADD/ADHD ... and we're only talking about behavior and attention ... anxiety, depression, you know. All those other pieces there too. We are becoming front lines for all those I feel like I'm dealing with it more and more. (P2)

Participant 3 added:

It's like, when I came to Washington, I had never really dealt with depression and prescribing antidepressants. And I was like, go to psych, go to psych, go to psych. And I come here and I'm like, ha, you are psych. So, you know, I just have to bite the bullet and learn how to do some basic adolescent antidepressant medication. (P3)

There was a desire to refer out and let mental health take over the patients' concerns; however, there was nothing immediately in place to allow them to do so as Participant 2

highlighted:

Before, I would just let ya'll be on top of the latest stuff and just refer to you guys. And now, I got to be on top of the latest stuff and how to diagnose and how to manage, and how to treat, and all that ... ok, I got to start figuring stuff out myself and start doing it before they can get in [with psych] ... so, a lot of times I'm manded to do stuff on my own while saying hey, let's get this referral in place, psychiatry may not be for three months, six months, who knows. (P2)

Integrated Care

The second emerging theme related to the benefits of mental health care integrated into the medical clinics and schools and was brought up by all three participants. Participant 3 shared:

I'm lucky because I work in a community health center, so we've got a behavioral health team ... and they're going to take over a lot of this before it comes back so me. So, we're going to make a plan. We want to do this, this this. So, this kid obtaining previous medical records, obtaining previous, uh, but I don't have to sit and get a lot of that history because BH is going to do that at the 1-hour visit they're going to have with them BH is going to take all the history and try to get if this is happening in two venues, what are the main symptoms, what services have already been provided through the school, family history, developmental history. So, they can hopefully gather all that in an hour and they've got their reports. It's a standardized process and they do their evaluation ... we try to schedule, it's a one hour appointment with BH followed by a 15 minute appointment with me, so, if things are working well I'll see them right after that. and so, they don't have to come in too many times. (P3)

Integrated care can come in many forms. While Participant 1 was more involved with the BH team on-site, Participant 2 had a different type of integrated care within their practice that still appeared to reduce the number of patients seen by the pediatrician in the office:

So, they have, I don't know anything about it because it's, it happens, the clinical lead

deals with schedule, sets up the, you know the video, and all that. So, I really haven't even seen that world and what they do. All I know is they have a tele-psych room and on Mondays they have scheduled with patients who come in and the clinical nurse brings them back and sets them up with whoever they're seeing for the videoconference, and they do their documentation. I do nothing with that. I don't do the medication, I don't do the review, I don't do anything related to that. So, that also might be why I don't see a lot of new ADD, behavioral concerns here. (P2)

Additionally, mental health can be integrated into schools as well as medical clinics.

Participant 3 shared:

Some of our community services will do in school counseling. Which is just, I mean that would be ideal for me as a parent, which is just to see my kid while they're at school, so I don't have to take them anywhere else. (P3)

This shows one more way that they are attempting to increase access and connection to mental health. While primary care providers shared the benefits of integrated care within clinics and the community, Participant 1 reminded us that finding clinics such as these is often a barrier. "I would say, um, the access. Like [the clinic I worked at] ... you have a built-in child psychologist. But that's extremely rare in primary care. Especially in primary care in underserved populations" (P3).

CHAPTER V: DISCUSSION

This study used interpretative phenomenological analysis (IPA) to obtain primary care providers' accounts of their assessment processes related to ADHD, particularly when psychological trauma may be a factor, and barriers they face throughout the assessment and treatment process. Participants included three board certified general pediatricians that each engaged in a semistructured interview. The data analysis resulted in 10 superordinate themes: professional identity, diagnostic considerations, aspects of assessment, factors impacting assessment, types of treatment, factors impacting treatment, personal abilities and confidence, limitations in school training, need to self-educate, and increasing access to care. Each superordinate theme had one to five emerging themes. The following section will discuss how these results related to current literature and research. It will conclude with research implications, limitations to the study, and conclusion.

Research Findings

Assessment

Participants' intake questions regarding a new patient with symptoms of ADHD were similar yet varied in depth of questioning at intake and time spent with patient. Additionally, emphasis was placed on different parts of the assessment for many participants. First and foremost, primary care providers often begin with their medical assessment, including hearing and vision tests, medications, and past and current medical conditions. This is an important aspect as participants pointed out: if a child cannot see or hear what is going on around them, they will not be able to pay attention which often leads to acting out behaviors. The *DSM-5* states that medical conditions such as "vision and hearing impairments, metabolic abnormalities, sleep disorders, nutritional deficiencies, and epilepsy" should be considered as possible influences on

ADHD symptoms (APA, 2013, p. 62). Participants did not state why they gather information about medication; however, it is presumed that they would consider possible side effects of medications used. If symptoms are better explained by medication effects, a diagnosis of medication/substance-related disorder would be appropriate rather than ADHD (APA, 2013). Additionally, two out of three participants emphasized the importance of obtaining detailed information about pregnancy and birth while gathering medical history. This is recommended both in the *DSM-5* as well as in the literature. While most children with low birth rate do not develop ADHD, there is an increased risk by two to three times (APA, 2013). Additionally, genetic risk factors for ADHD combined with smoking or alcohol use, neurotoxin exposure, and infection during pregnancy have also been linked with ADHD in children (APA, 2013).

Two out of three participants stated they also either rule out or consider as a comorbid condition learning and developmental disabilities, disruptions in sleep, and mental health concerns such as depression, anxiety, or other trauma reactions, particularly in adolescents. All the considerations participants listed were diagnoses or conditions recommended by the *ADHD: Clinical Practice Guidelines for the Diagnosis, Evaluation, and Treatment of Attention-Deficit/Hyperactivity Disorder in Children and Adolescents* (Subcommittee on Attention-Deficit/Hyperactivity Disorder & Steering Committee on Quality Improvement and Management, 2011). The Vanderbilt, the measure most used by participants in practice to screen for ADHD, also screens for oppositional defiant disorder (ODD) and conduct disorder (CD), two diagnoses recommended in the clinical practice guidelines to assess and rule out when assessing symptoms of ADHD. However, these were two diagnoses participants failed to mention throughout their interviews. According to Freitag et al. (2010) they are the most prevalent comorbid disorders found with ADHD. ODD was found in 40% to 65% of children, CD 27% to

47%, followed by major depressive disorder 0% to 24%, and generalized anxiety disorder 13% to 21%. Behavioral disorders such as ODD and CD often require significant individual, parent, and family training to correct the behaviors, and it is vital that they are assessed for early on, particularly when symptoms of ADHD arise.

Due to the need for primary care providers to assess and treat children with ADHD, the AAP has dispersed more guidelines and tools to assist them throughout that process. Part of the assessment of ADHD includes the use of measures and checklists to help identify level of functioning and impact of behaviors, particularly at home and school. Each participant stated they used the Vanderbilt Assessment Scale with parents and teachers to assess children's behavior at home and school. Primary care providers probably go to this behavior rating scale because it can be accessed for free. Additionally, participants stated they were most familiar with this measure. However, it is only valid for children between the ages of 6 and 12. Recommended clinical guidelines state that primary care providers should be assessing any child for ADHD who is 4 years and older and comes in with symptoms of inattention and/or hyperactivity (Felt et al., 2014). There are validated behavior rating scales that can be used for children as young as 18 months through adulthood. Some of these measures include the Attention Deficit Disorder Evaluation Scale (McCarney & House, 2019), Brown Rating Scales (T. E. Brown, 2001), Child Behavior Checklist (Achenbach & Rescorla, 2001), and Conners (Conners, 2008; Felt et al., 2014). It is unclear whether primary care providers know where and how to access behavior rating scales outside of the Vanderbilt. In addition to knowing where and how to access other measures, the time they take to complete, score, and interpret, as well as the cost of other measures, are factors to consider as well.

It was acknowledged by primary care providers that the Vanderbilt is “just a tool” (P2) and a child should not be diagnosed solely on the results of the behavior rating scale. This is in line with the clinical guidelines as well as current literature since there are no “gold standard” tools for determining ADHD at this time (Sims & Lonigan, 2012). Parent and teacher rating scales raise multiple concerns, particularly if they are used for diagnostic purposes and not as an information gathering tool. Sims and Lonigan (2012) lay out many of the concerns that arise when utilizing behavior rating scales. These include parents’ own symptomatology and levels of stress may affect ratings, teachers’ ratings of inattentive behaviors have been shown to be low, teachers’ bias outside of the child’s behavior may affect scores, and the challenge parents and teachers have differentiating ADHD behaviors and symptoms from other disorders. Additionally, symptoms of ADHD are common in the general public. Relying solely on rating scales for diagnostic purposes may include diagnosing people who are at subclinical levels or are currently having difficulties due to circumstances in their environment. A study by Lewandowski et al. (2008, as cited in Bolger-Reina, 2011) found that college students diagnosed with ADHD and those without ADHD both endorsed elevated rates of ADHD symptoms on a typical ADHD symptoms checklist. Therefore, it is critical to conduct a clinical interview that includes duration and frequency of symptoms and impact on functioning. During this study, all participants endorsed asking about frequency and duration of symptoms in addition to information received on the behavior rating scale. If rating scales are to be used, providers should focus on measures that are norm-referenced broad band measures, meaning measures that compare results to a specific population, relative to the child’s demographics, and look at multiple internalizing and externalizing factors. Examples of such measures are the Behavior Assessment System for Children (BASC; Reynolds & Kamphaus, 2015), the Child Behavior Checklist (Achenbach &

Rescorla, 2001), the Conners Comprehensive Behavior Rating Scales (Conners, 2008), and the Brown Rating Scales (T. E. Brown, 2001).

One way that asking about frequency and duration of symptoms helped primary care providers was to see if this was more of an ongoing issue or potentially something caused by current environmental stressors. As Participant 1 stated, intermittent or situational behaviors may be attributed more to stressors or traumatic experiences that are triggered by that environment or situation. All participants considered the contribution of past and current life circumstances and how they may be currently impacting the child or adolescent. All participants were aware that “trauma experiences, posttraumatic stress disorder, and toxic stress are additional comorbidities and risk factors of concern” (Wolraich et al., 2019, p. 8). While past traumatic experiences did not rule out a diagnosis of ADHD for primary care providers, it created an additional layer of questioning for them as well as additional time to determine if symptoms were due to ADHD or better explained by life circumstances.

Factors Impacting Assessment

Assessments for children and adolescents with attention and behavioral concerns being time consuming was the number one barrier identified by participants. This was not only a barrier for primary care providers, but as Participant 3 stated, for families as well. All three participants reported that multiple appointments are necessary to complete a full assessment for children and adolescents with attention and behavioral concerns. Appointments often include gathering history, conducting a medical assessment, reviewing behavior rating scales, communicating with schools and outside resources, and creating a treatment plan. While longer appointments are often necessary for adequately addressing ADHD, currently, the billing options in pediatric primary care pay more for multiple shorter visits than they do for a longer, extended

visit (AAP, 2019). This is problematic for many reasons, including continuity of care and patients' abilities to make it to multiple appointments. Additionally, "payments for E/M codes for chronic care are often insufficient to cover the staff and clinician time needed to provide adequate care" (AAP, 2019, p. 31). Time spent scoring and reviewing behavior rating skills as well as coordinating with schools and other resources is necessary to maintain evidence-based assessment practices for ADHD, yet insurance companies often deny payment for these services deterring primary care providers from following clinical guidelines (AAP, 2019).

One additional discrepancy from the clinical guidelines cited frequently in chart review studies is the lack of reports from school in the patient's chart (Moore et al., 2018). All participants shared the difficulties they face attempting to retrieve information from the schools. Once again, the amount of time it takes to connect with school personnel, the time needed to ensure measures are received and returned, and the lack of payable codes available for these tasks contributed to these challenges. This study found that although primary care providers asked about school during every assessment and attempted to acquire behavior rating scales from teachers, their efforts were at times unsuccessful. In addition to school reports being difficult to obtain, participants also stated that information from parents and caregivers is often lacking or incomplete. However, clinical guidelines do not state whether a diagnosis can be given if all of the suggested information and measures have not been gathered. Research discussing evidenced-based assessment states that "the assessment process is inherently a decision-making task in which the clinician must iteratively formulate and test hypotheses by integrating data that are often incomplete or inconsistent" (as cited in Bolger-Reina, 2011, p. 13).

Treatment

The most prevalent treatments discussed by all participants combined medication and

mental health therapy to help manage symptoms associated with ADHD. Participants shared that some families only want medication and others do not want any. However, each participant shared how they discuss with the families whether medication is implicated in their child's case, and two participants emphasized that medication is often only a piece of their treatment protocol. Both medication and behavioral training are recommended treatments in the literature. The clinical guidelines for ADHD suggest that children 4 years old and under receive behavioral therapy only prior to considering alternative treatments, and children 6 to 18 years old receive both an FDA-approved medication for ADHD as well as parent and/or teacher administered behavior therapy (Subcommittee on Attention-Deficit/Hyperactivity Disorder & Steering Committee on Quality Improvement and Management, 2011). Wolraich et al. (2019) stated:

Behavioral therapy involves training adults to influence the contingencies in an environment to improve the behavior of a child or adolescent in that setting. It can help parents and school personnel learn how to effectively prevent and respond to adolescent behaviors such as interrupting, aggression, not completing tasks, and not complying with requests. Behavioral parent and classroom training are well established treatments with preadolescent children. (pp. 11–12)

Reported benefits of this treatment include a reduction in behaviors associated with ADHD and improvement in the children's and adolescents' overall functioning (Subcommittee on Attention-Deficit/Hyperactivity Disorder & Steering Committee on Quality Improvement and Management, 2011). Behavior training is what is recommended in clinical guidelines for ADHD; however, referrals to mental health professionals is what was recommended most by participants. It is unclear whether parents and primary care providers are educated about what behavioral training provided by parents and teachers entails along with its benefits.

While medication was often included in participants' courses of treatment, the patient was often recommended to mental health or behavioral therapy as well, unless participants felt that it was a straightforward case of ADHD with little to no risk factors for other mental health concerns. However, literature suggests that ADHD alone may contribute to internalizing disorders, low self-esteem, and strained relationships (Siegfried et al., 2016). Therefore, one could argue that all children suspected of or diagnosed with ADHD should be referred for behavioral and/or mental health therapy in addition to medication and parent or teacher behavioral training. A study looking at treatments among children and adolescents with ADHD in the United States found that out of 2,495 participants, 90.8% received medication, 85.8% received school accommodations or classroom management support, only one-third of participants had received any type of skills or parent training, and only 19.8% had received cognitive behavioral therapy (Danielson et al., 2018). Additionally, Rockhill et al. (2016) found that children assigned to six sessions of telemental health treatment including parent behavioral management had more follow-up visits in a shorter amount of time, greater likelihood of medication continuation, and higher doses of medication than participants who were being seen solely by their PCP with only one visit with a telepsychiatrist. Participant 1 shared that one trend they see when treating children and adolescents with ADHD is that psychiatrists tend to treat patients with higher doses of medication than primary care providers. This is consistent with the literature. Additionally, the MTA study, a landmark study comparing methylphenidate and behavioral therapy, found that when children were administered the highest dosage out of four different dosages, 70% responded to the stimulant methylphenidate (MTA Cooperative Group, 1999). However, when a child or adolescent was also engaged in behavioral therapy, lower

dosages of medication were required to have similar effects, which can reduce the risk of adverse effects from medication usage (MTA Cooperative Group, 1999).

Studies that have compared behavior therapy to stimulants have shown that stimulant medication has a more immediate effect on core symptoms of ADHD (MTA Cooperative Group, 1999). However, it was less effective in improving the children's and adolescents' level of functioning (Wolraich et al., 2019). In the study conducted by Wolraich et al. (2019), parents had higher rates of satisfaction when their child was engaged in behavior therapy alone or in conjunction with medication. Children who have been diagnosed at a younger age were generally found to have received more types of recommended treatments than children and adolescents diagnosed at older ages (Danielson et al., 2018). Lastly, the most recent report of the MTA longitudinal study indicated that medication alone did not improve outcomes over the long term without behavioral intervention as well, and that medication adherence after the 14-month follow-up was significantly lower (Molina et al., 2009). The difference between stimulant versus nonstimulant medication was not reviewed throughout this study.

Benefits of medications highlighted by participants included increasing the rate of follow-up visits and managing symptoms quickly in necessary situations. For instance, Participant 1 shared that he has worked with families at risk of getting kicked out of a shelter due to their child's behavior. Medication may quickly mitigate behavioral symptoms to reduce their risk of losing shelter. Previous research showed that the rate of medication prescribed for ADHD increases in lower SES families (Sayal et al., 2018). Participant 1's experience, along with reduced access to care and medication costs often being covered by state insurance for low SES families may partially contribute to the increase in medication rates for this population. Additionally, two out of three participants discussed the high rates of patients not following up

based on doctor recommendations. Participant 2 and 3 stated that when medication is prescribed, patients tend to follow up more frequently to get refills on their prescriptions. However, a study conducted by Sorita et al. (2014) found that no show rates were not significantly different between groups that were required to follow up for medication refills and those that were not.

Factors Impacting Treatment

Patients not following up with the primary care providers or not following through with recommendations was one barrier for treatment discussed by participants. Sorita et al. (2014) found that in a clinic seeing all ages, younger age, male gender, Medicare or Medicaid insurance, and a diagnosis of diabetes and asthma were associated with an increase in no-show follow-up appointments with their primary care provider. Additionally, Monastra (2005) studied factors associated with noncompliance with medical advice regarding ADHD including dissatisfaction with the diagnostic process, fear of stimulants, lack of medication response or the development of side effects from medication within the first month, lack of understanding the reason medication was prescribed, and insufficient clinical response. Lastly, Mucka et al. (2017) identified more family barriers to completing follow-up recommendations and care:

Limited resources, childcare difficulties, access to care issues, transportation problems, delays in insurance authorization, a lack of time to complete the recommendation with the 4–6-week follow-up period, other competing time demands, parental stress, a lack of teacher cooperation in carrying out school-based recommendations, a lack of communication between the parent and teacher, and the perception that a recommendation would not be helpful. (p. 1030)

Additionally, due to genetic aspects of ADHD, many parents of children with ADHD may have a diagnosis themselves, potentially increasing disorganization and the inability to maintain

complete appropriate paperwork and appointments as necessary. Parents of children with ADHD also experience more feelings of stress, depression, and self-blame, and they experience more separation or divorce (Conway et al., 2011). Therefore, with or without an ADHD diagnosis themselves, their levels of stress increase. Needless to say, there are multiple barriers to patients following up with primary care providers and recommended treatments. However, this continues to hinder primary care providers' ability to manage and treat ADHD according to clinical guidelines.

All three participants stated that they prefer to defer to the psychiatrist or psychologist with any behavioral, learning, or mental health concerns. However, as each participant and the literature highlighted, there are shortages of specialists and referral resources (AAP, 2019), particularly when a co-occurring disorder is likely due to the varying treatment options for different co-occurring conditions. However, as previously mentioned, access to specialists and mental health professionals is sparse. Therefore, many primary care providers are tasked with treating patients based on the knowledge that they have until their patient can get in with the psychologist or psychiatrist. Danielson et al. (2018) found that "children without a co-occurring disorder were as likely to receive medication treatment as children with a current or lifetime report of a co-occurring condition" (p. 5). Classi et al. (2011) found that children with ADHD and a co-occurring reading disability were significantly less medicated than those without a reading disability. As mentioned by Participant 2, there are risks associated with medicating a child for ADHD when certain co-occurring disorders are suspected, such as a cognitive or developmental disability. However, which risk is greater, not medicating a child who may need it due to suspicion of co-occurring disorder, knowing it will take months for a full psychological assessment, or medicating based on what you know? The research is limited and varies on the

effectiveness of stimulant and nonstimulant medication for ADHD when a co-occurring disorder is present.

Increasing Access to Care

Every participant shared the difficulty of getting patients in with a psychiatrist or mental health professional for a psychological assessment, medication, or counseling. This shortage in the mental health field is noted in the literature. The AAP created clinical guidelines for the assessment and management of ADHD and other mental health concerns due to the recognition that primary care providers have become front line workers for mental health related issues. While primary care providers are necessary to manage the number of patients needing mental health care due to the shortage of specialists and mental health professionals, this also increases the likelihood of fragmented care and communication barriers among the patient's care team (AAP, 2019).

According to the AAP (2019), there are only 8,300 child psychiatrists and 662 developmental-behavioral pediatricians in the United States. Psychiatrists are present in only one-quarter of U.S. counties, while almost half of all counties do not have a pediatrician in the area. There is little incentive for people seeking a medical degree to choose these routes because there is additional education and cost required and "little or no return on this investment in terms of increased compensation for these specialists" (AAP, 2019, p. 30). With the lack of mental health professionals, primary care providers have few referral options at their disposal.

One solution proposed by the AAP (2019) is to incentivize and support pediatric primary care mental health specialist certification for advanced practice registered nurses (APRN) to increase patient access to a provider knowledgeable on evidence-based care for ADHD and other mental health concerns. Additionally, the need to develop collaborative and integrated care

models is pronounced in both participant reports and the literature. The APA and the Academy of Psychosomatic Medicine (APM) report, “Bringing mental health services to primary care normalizes and de-stigmatizes treatment for behavioral health disorders, simultaneously increasing access for patients by making evidence-based mental health services available in their regular primary care clinics” (APA & APM, 2016, p. 10). One participant did not have access to behavioral or mental health in their practice, one participant had telepsychiatry accessible in their office, and another had a primary care behavioral health (PCBH) team on site. The participant who had telepsychiatry stated that it appeared to reduce her caseload regarding patients with attention and behavioral concerns. However, these sessions are often utilized for medication management rather than long-term therapeutic purposes, and there was little to no communication between the psychiatrist and primary care provider. The participant with PCBH on site shared that PCBH immediately takes over when attention, behavior, or mental health concerns are identified by the pediatrician and have their own appointment where they have time to gather a detailed history and other necessary reports to help determine an accurate diagnosis. This allows the primary care provider to focus on the medical aspect and prescribe medication and treatments based on a mental health professional’s recommendation.

There are many different models of integrated care, all with varying degrees of support.

Models include:

- a collaborative care model (CoCM) in which a behavioral health care manager, psychiatric consultant, and the treating practitioner work together to deliver patient services;
- PCBH teams on site that work directly with the primary care providers and come into the appointment with the primary care providers as needed;

- co-located behavioral health teams that coordinate patient care with the primary care providers at the same location but separate offices;
- access to telepsychiatry where patients can have consultation and appointments as needed via video conference; and
- on-call consultation, among others.

The research continues to show that integrated services are more beneficial in reducing primary care providers' burden, increasing access to patient care, as well as adherence to clinical guidelines, higher rates of follow-up attendance, and reduction in parent and child stress than co-location or consultation services alone (Moore et al., 2018). At the University of California's San Francisco campus, they began using a pediatrics/psychiatry assessment and consultation team (PPACT) model that was proven to reduce wait times and improve access to care for more than 75 patients at the time of the study (Brahmbhatt, 2016). Moore et al. (2018) found that primary care practice with varying levels of integrated behavioral health care had higher rates of AAP clinical guideline adherence and twice as many patients engage with a behavioral health professional than practices without behavioral health on-site. Osofsky et al. (2016) studied more than 100 children under the age of 8 in a rural primary care setting. Parents and children that received collaborative mental and behavioral health treatment in addition to their primary care services experienced reduced stress as well as a reduction in identified problems in their child. Integrating mental and behavioral health into primary care offices also has the potential to increase access to care in more rural areas.

The CoCM is one of the most researched integrated care models with over 80 randomly controlled trials (RCTs) across diverse populations (Carlo et al., 2020). This model has been shown to improve outcomes for patients with behavioral health disorders being seen in primary

care settings, lowering patient healthcare costs, and improving access and satisfaction of care (APA & APM, 2016). There are four essential elements of collaborative care that can be adapted to various community settings: team driven, population-focused, measurement-guided, and evidence-based. CoCM is a team-based approach that includes a primary care provider that oversees the overall patient care plan, a psychiatric consultant that makes medication and treatment referrals, and a behavioral health care manager that completes more in-depth interviews and validated screening measures as needed. Most often, the psychiatrist reviews the care manager's caseload weekly and provides recommendations for "medication or dosing changes, addition or discontinuation of psychosocial interventions, referral to alternative behavioral health services or assessments" to the primary care provider (APA & APM, 2016, p. 14). One criticism of CoCM in the past has been financial sustainability due to the amount of work conducted outside of face-to-face visits. The success of RCTs related to CoCM have encouraged the development of current procedural terminology (CPT) codes to be created and insurance companies to pay for services rendered. In 2018, CPT codes related to CoCM services were integrated into billing practices, leaving little downside to utilizing CoCM (Carlo et al., 2020).

Additionally, schools are a great way to increase patients' access to care, particularly related to classroom interventions, behavioral training, and mental health counseling. Participants all shared that they rely heavily on the school for information gathering and, at times, treatment assistance. However, the schools' full range of services are often underutilized. DuPaul et al. (2019) found that at least one in five students with ADHD did not receive educational or classroom behavior management support despite academic and social impairments. It is critical to have the school integrated into the student's treatment plan, since

one in four students with ADHD were found to have repeated a grade and one in six had been expelled in a study conducted by DuPaul et al. (2019). Additionally, middle and high school students with ADHD receive even fewer school services, as well as children and adolescents with inattentive type ADHD. Many parents are unaware of their rights within the school system, and school staff are often overwhelmed and not forthcoming due to the responsibilities student accommodations places on teachers and staff, contributing to only half of students with ADHD having an individualized education plan (IEP) or 504 plan (DuPaul et al., 2019). An IEP falls under the Individuals with Disabilities Education Act (IDEA) and requires that eligible students receive individualized school-based services that allow them to still receive an appropriate public education (Spiel et al., 2014). A student is eligible for an IEP when they have received a diagnosis that falls under one of the 13 disability categories, have impacted educational performance, and are in need of specialized instruction. Students with ADHD whose educational performance is not impacted by their disorder do not qualify for an IEP. A 504 plan is developed from Section 504 of the Rehabilitation Act of 1973. This act allows individuals with disabilities to participate with peers in activities in any institution that receives federal funding (Spiel et al., 2014).

Due to the high rates of learning and behavioral disorders, diminished social functioning, and low self-esteem in children and adolescents with ADHD, early intervention in the schools is necessary to ensure their success. Studies have found that beliefs about ADHD are an important factor in how interventions are utilized in the classroom and school setting, and how the child's behaviors are perceived, as inclusive or stigmatizing (Moore et al., 2018). Therefore, proper education of teachers, parents, and peers within schools related to ADHD and mental health is necessary. Integrating counseling programs into the schools would not only offer parent and

teacher support and advocacy opportunities but also would increase early intervention opportunities and provide more classroom, academic, and social support for children and adolescents. Rupani et al. (2012) found that more comprehensive school-based counseling benefited all 21 participants with ADHD in areas of motivation, attendance, classroom behavior, academic achievement, and relationships with teachers. This is consistent with other research related to school-based counseling programs (Carey et al., 2012). Not only would more comprehensive school-counseling programs benefit students academically, behaviorally, and socially, but as Participant 3 reiterated, it increases access to counseling and behavioral therapy for children and adolescents. It is one less appointment and one less worry about transportation for families.

Training, Confidence, and Continuing Education

Each participant reported a minimal amount of training throughout medical school and residency in ADHD, trauma, and other mental health conditions leading to limited confidence in abilities to assess, diagnose, and manage these conditions. Additionally, all participants noted that enrolling in ongoing continuing education on these topics is necessary to provide their patients with adequate care. The AAP acknowledges that minimal developmental and mental health care training during residency is a barrier to primary care providers being able to provide adequate care (AAP, 2019). Therefore, they have begun to create more continuing education opportunities and offer resources to primary care providers to assist with their ongoing learning needs, through email, virtual trainings, and in-person trainings. The amount of continuing education credits varies state by state and is approximately 12 to 50 credit hours per year according to CE Central (University of Kentucky, 2021), an online platform where primary care providers can go to complete continuing medical education. Not all states have required topics;

therefore, primary care providers can choose what topics are of interest to them, contributing to varying levels of care related to learning, behavioral, and mental health needs among primary care providers.

Based on the available literature, one change that has not been made in recent years is modifying the curriculum in pediatric and family medicine residency programs to include more discussion on developmental, behavioral, learning, and mental health issues per AAP recommendations (AAP, 2019). Increasing this would give primary care providers the confidence and abilities they need to function within a medical home setting. A medical home setting “is an approach to providing comprehensive primary care that facilitates partnership between patients, clinicians, medical staff, and families. It is a medical practice organized to produce higher quality care and improved cost efficiency” and is recommended for children diagnosed with ADHD (AAP, 2021, para. 2). French et al. (2020) found that general practitioners who engaged in two 20-minute modules that included patient testimonies, drag and drop games, specialist videos, and pictures regarding awareness of ADHD reported an increase in knowledge and confidence and a decrease in misconceptions that was maintained at the two-week follow-up. Including awareness trainings such as these throughout pediatric and family medicine residency programs may prove to be an easy, effective strategy for meeting primary care providers’ training needs and increasing confidence and abilities following their education and residency programs.

Research Implications

This research is important to help improve aspects of primary care providers’ education and residency programs to increase confidence and abilities related to learning, behavioral, and mental health conditions they may encounter in practice. Additionally, this research helped to

identify gaps in care for children and adolescents and identify the ways in which pediatric assessment and treatment processes for ADHD vary, in addition to barriers that primary care providers experience during assessment and treatment of children and adolescents with ADHD. This research was intended to identify how primary care providers incorporated psychological trauma into their assessment of ADHD with children and adolescents. Each participant acknowledged the relationship and co-occurrence between ADHD and trauma and stated that children who have symptoms of ADHD are often given a referral for therapy. Participants shared that although referrals are given, there may be long wait lists for therapists; limited therapists in their area; limited access to transportation, time, or financial resources; or the patient chooses not to follow up due to personal preference. Therefore, this research showed that while participants consider the impact of trauma throughout their assessment process, there are many more factors that are to be considered.

It is also important to consider the ramifications of physicians assessing for trauma when there is limited time to follow up in the moment if needed. One solution to this is the integrated primary care behavioral health models. Integrated primary care and behavioral health sites have begun to shift the way providers can access and interact with patients and have shown they can decrease many of the barriers identified in this study. Further research is needed to identify the most effective way to integrate behavioral health and primary care to reduce barriers for both providers and patients. Additional literature also highlighted the benefits of comprehensive mental and behavioral health teams in school. These changes in primary care and school settings have been shown to not only increase patients' adherence to recommended treatment, reduce stress for primary care providers and school staff, and increase students' level of functioning in the school setting, but they also increase patients' access to care. Education in the community is

necessary to increase the number of integrated care teams.

This research is important to help improve aspects of primary care providers' education and residency programs to increase confidence and abilities related to learning, behavioral, and mental health conditions they may encounter in practice. Additionally, this research helped to identify gaps in care for children and adolescents. Future research should look at the use of semistructured interviews primary care providers can utilize when a child comes in with attention or behavioral concerns to increase consistency and confidence among primary care providers and increase adherence to AAP clinical guidelines and *DSM-5* diagnostic criteria. More research is also needed in the area of inadequate payer coverage. Areas for research should include whether payers cover all assessment and treatment services that are recommended in the AAP clinical guidelines and *DSM-5*. Having payable diagnostic codes that are in line with clinical guidelines could incentivize primary care providers to adhere closer to AAP and *DSM-5* guidelines.

Limitations

Limitations of this study include a low number of participants that were all the same type of primary care provider. While IPA research indicates that three participants is adequate for dissertation purposes, more participants from different areas of the country and varying types of primary care providers, such as family practitioners, primary care physicians, physician assistants, and nurse practitioners, would have provided more perspective on the topic. Additionally, participants were aware that the researcher was interested in the integration of trauma throughout the assessment process. This may have prompted participants to discuss trauma and adverse experiences throughout the assessment and treatment process when they may not have otherwise. Lastly, participants had completed their education and residency programs

anywhere from 12 to 35 years ago. Having participants who had completed education and residency programs in the past 10 years would have been beneficial to determine if training through school has changed with the increasing role mental health primary care providers have had over the past 10 years.

Conclusion

ADHD is the most prevalent neurobehavioral disorder in children and affects approximately 11% of children aged 4 to 17 years old in the United States (Subcommittee on Attention-Deficit/Hyperactivity Disorder & Steering Committee on Quality Improvement and Management, 2011). Research continues to show that ADHD and psychological trauma are closely linked. Not only are symptom presentations often similar, but ADHD has the potential to increase a child's chances of experiencing trauma, as well as increase a child's symptoms after experiencing a traumatic event (Littman, 2009). The AAP has created clinical guidelines and provided resources for primary care providers due to their increasing need to fill a gap in mental health services due to lack of access, lack of transportation, financial constraints, child mental health professional shortages, and stigma related to mental health care (AAP, n.d.).

The purpose of this study was to gain a better understanding of primary care providers' assessment and treatment processes for ADHD with children and adolescents, with particular interest in how psychological trauma was viewed and incorporated, and to identify perceived barriers primary care providers experience throughout this process. Currently, there is a need for primary care providers to assist with the assessment and management of ADHD and other mental health conditions. Although clinical guidelines are in place and the criteria for ADHD are listed in the *DSM-5*, there are many barriers that both primary care providers and families face that impact the assessment and treatment processes. "Fully addressing systemic barriers requires

identifying local, state, and national entities with which to partner to advance solutions and manifest change” (Wolraich et al., 2019, p. 19). Some areas in need of change are increasing the payer rate for evidence-based assessment and treatment services; increasing incentives for integrated care, care in rural areas, and becoming a professional in the mental health field; and allowing other professionals such as APRNs to gain certifications and training in areas of mental health to help fill gaps in services.

Research shows that diagnosis and treatment of ADHD and other mental health conditions can be appropriately assessed and managed in the primary care setting for children and adolescents. However, mental health integrated into primary care settings as well as schools is shown to increase access to mental health care for patients, increase adherence to recommended assessment and treatment practices by both patients and primary care providers, increase rates of patient follow-up visits, and reduce burdens placed on parents, teachers, schools, and primary care providers (Moore et al., 2018; Wolraich et al., 2019).

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Appendix A:
Interview Questions

I have found that the literature tends to focus on the overlap of ADHD and psychological trauma symptoms in children; however, there does not appear to be much primary care providers' input. I am interested in your experience of assessing children with these symptoms.

First, I would like to get to know you a little better and gather some demographic information for the purposes of the study.

1. How many years have you been a licensed physician?
2. What state are you licensed in?
3. What type of primary care provider are you?
 - a. (e.g. family practice or pediatrician)
4. Is there a specific area you specialize in?
5. What type of practice are you associated with?
 - a. (e.g. private practice, primary care behavioral health, health care co-op, etc.)
6. How frequently do you treat children and adolescents (< 18) in your practice?
7. What is your age?
8. What is your identified gender?

Next, please read the following vignette and share your thoughts about how you might assess the patient. Please assume that this is your first encounter with the patient:

Vignette

A new patient, Suzie, is a 6-year-old Caucasian female who lives at home with her adoptive mother and father. Suzie was adopted at 3-years-old. She is brought in for a well-child visit. Her parents mention that they are concerned with her inability to sit still, stating that she is "very active." In addition, Suzie's parents mention that it often "seems like she is not listening." When Suzie gets excited, her behavior becomes dysregulated and her parents often have to hold her to calm her down. Suzie's parents also state that they have been giving her Melatonin to help her fall sleep at night. At school, Suzie does not appear to have many friends, and teachers report that she is "often distracted by what is going on around her and has trouble completing assignments in the classroom."

The following questions may be asked if information pertinent to the research question are not addressed or need further clarification:

1. How often do you see children in practice with symptoms such as difficulty concentrating, easily distracted, hyperactive, troubles with emotional and/or behavioral regulation, restless, and trouble sleeping?
2. How do you typically assess children presenting with these symptoms?
 - a. Prompts if needed – what occurs at the initial appointment? how often are follow up appointments needed? what measures/questionnaires, if any, are used? what diagnoses/conditions are considered? Do you gather a trauma history? How would the assessment process change for children versus adolescents?
3. What type of training have you participated in related to ADHD and trauma?
4. What barriers do you experience throughout the assessment process?
5. How do you go about determining the treatment plan?

- a. Prompts if needed – how often do children with these symptoms follow up?
6. How often are consultations to specialists needed? Who do you usually seek out assistance from?
7. When are outside referrals for treatment typically needed?
8. What else do you feel is important for me to know about your experience assessing and treating children with symptoms of ADHD and/or psychological trauma?