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Parent Adherence To Psychological Evaluation Recommendations

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INTRODUCTION

Attention deficit/hyperactivity disorder (ADHD) is a neurodevelopmental condition characterized by developmentally inappropriate levels of inattention, impulsivity, and motor activity (Chen et al., 2008). According to Kandel (2006), approximately 3-5% of school-aged children have an ADHD diagnosis. A variety of impairments including conduct problems, low academic achievement, increased risk of accidental injury, poor peer acceptance, and disrupted parent-child relationships may result if children do not receive adequate treatment for ADHD (Chen et al., 2008).

A psychological evaluation is often the first step towards intervention for children displaying difficulties associated with ADHD symptoms. By integrating information from various domains (i.e., cognitive, social) and multiple informants (i.e., parents, teachers), results of an evaluation can provide parents with increased understanding of their child's behavior, an accurate diagnosis, and treatment recommendations to facilitate positive outcomes for the child and his/her family. The degree to which the negative outcomes associated with ADHD can be diminished relies in part on the extent to which patients follow through on recommendations that are provided as part of the psychological evaluation. As such, the evaluation often serves as a blueprint for implementing effective treatment for ADHD.

A number of efficacious treatments have been developed for ADHD. Evidence-based interventions for ADHD fall primarily into two broad categories, pharmacological treatment (e.g., stimulant and non-stimulant medication) and behavioral interventions (e.g., parent training, classroom interventions). Despite the effectiveness of both treatment types, research has shown a non-adherence rate ranging from 20% to 65%, for pharmacological interventions and 47% for behavioral interventions among children with ADHD (Kandel, 2006).

Due to the lifelong negative outcomes associated with untreated ADHD, this high non-adherence rate to treatment is problematic. Previous research aimed at understanding this discrepancy between high prevalence rates of ADHD and non-adherence rates to treatment has found that parents consistently report a number of barriers that impact their ability to adhere to treatment recommendations. Gaining a comprehensive understanding of parent/caregiver levels of adherence, as well as obstacles to treatment adherence, will provide direction to providers to develop recommendations and methods of feedback that facilitate greater compliance with treatment recommendations.

The majority of research examining factors that influence adherence to treatment has been conducted in medical settings and has examined adult health behaviors for managing a physical illness (e.g., Hagger & Orbell, 2003). A primary focus of medical research has been on cognitive factors that underlie a patient's motivation to adopt behaviors that are proposed to improve health. The Common Sense Model (CSM) of illness representations was created by Leventhal, Meyer, and Nerenze in 1980 with the goal of explaining cognitive factors that influence illness coping behavior and outcomes in adults. The original CSM included four cognitive factors including *cause, consequences, timeline,* and *identity*. Several years later, Lau and colleagues (1989) expanded the original CSM to include one additional cognitive factor, *controllability*, and in 2002 Moss-Morris and colleagues added two additional factors, *emotional representations* and *coherence*. Recently, Wong et al. (2018) adapted the CSM to apply to parent understanding, acceptance, and subsequent interest in seeking services for a child diagnosed with ADHD.

The CSM hypothesizes that individuals create cognitive representations of a medical illness based on both concrete and abstract sources of information in order to make sense of and

manage the problem. As mentioned, the original CSM focused on four facets of understanding and coping with medical illness that occurs in adults (Hagger & Orbell, 2003). The *cause* dimension focuses on factors perceived to be responsible for the illness (i.e., heritability, exposure to toxins). The *consequences* facet entails one's beliefs regarding the impact of illness on overall quality of life. The *identity* facet considers an individual's label of an illness and knowledge of symptoms associated with it. The final facet, *timeline,* entails beliefs about the course of the illness and duration of symptoms. In 1983, Lau and Hartman added cure*,* which was later changed to be termed *controllability*, as the fifth facet of the CSM. *Controllability* refers to one's self-efficacy regarding coping behaviors and/or the effectiveness of treatment (Lau et al., 1989). It wasn't until several years later that Moss-Morris and colleagues (2002) added the *emotional representation* dimension, which considers the individual's emotional response to the illness (i.e., stress) and the *coherence* dimension, which encompasses the individual's perceived understanding of the illness.

Wong et al. (2018) adapted the Lau et al. (1989) model to apply to parent perceptions and coping with a diagnosis of ADHD in children and adolescents. In addition to considering all seven dimensions, they included consideration of parent attributions (i.e., globality, stability, and controllability) within the timeline and controllability dimensions of the CSM. Previous research has found that parent attributions regarding child diagnosis influences their willingness to engage in certain types of treatment (e.g., Reimers et al., 1995). Wong et al. (2018) conducted a review of the available literature on perceptions of ADHD among youth and summarized the findings using the CSM, with the goal of highlighting the relationship between illness representations and treatment adherence.

While the previously mentioned studies have investigated overall adherence to treatment, very few studies have investigated adherence to psychological evaluation recommendations. Two pioneer studies in this area examined the role of barriers in adherence to psychological evaluation recommendations. Dreyer et al. (2010) conducted follow-up interviews 4-6 weeks following feedback on a child ADHD evaluation, and Mucka et al. (2017) followed up 1 year after parents received their child's assessment results. Both studies found an overall adherence rate to assessment recommendations of approximately 70%. Level of parent stress (Dreyer et al., 2010) and the total number of barriers (Dreyer et al., 2010; Mucka et al., 2017) were found to predict non-adherence to assessment recommendations. Dreyer et al. (2010) recommended that future research more specifically consider factors associated with service selection (i.e., treatment acceptability). Mucka et al. (2017) note that parent reactions to their child's diagnosis should be considered in future research exploring treatment adherence. They also suggested that future research consider the influence of demographic variables such as gender and SES.

The goal of the present study is to build on Dreyer et al. (2010) and Mucka et al. (2017) in examining factors predicting adherence to psychological evaluation recommendations among parents of children evaluated for ADHD. The present study will make use of a younger age range (5-12) more typical of referrals for ADHD evaluations and will consider demographic variables potentially associated with treatment adherence including child gender, parent education, and family income. Consistent with the CSM, the present study will also consider parent perceptions of their child's behavior (i.e., attributions of child control over behavior) as well as parent knowledge of ADHD. In sum, this study will examine parent attributions, beliefs about ADHD, and parent stress level in predicting adherence to recommendations included in the child's psychological evaluation. This study will also consider parent interest in help seeking prior to

receiving a diagnosis, as a predictor of adherence to psychological evaluation recommendations. This study will potentially contribute to the present literature by providing more information on the influence of parent perceptions of ADHD on recommendation adherence, in turn helping to better understand and address barriers in the help seeking process.

LITERATURE REVIEW

Attention-Deficit/Hyperactivity Disorder (ADHD)

Attention-deficit/hyperactivity disorder (ADHD) is a neurodevelopmental disorder characterized by developmentally inappropriate levels of hyperactivity, impulsivity, and inattention (Hong et al., 2013; Johnston et al., 2005; Tarver et al., 2014; Wong et al., 2018). ADHD is one of the most common childhood neurobehavioral disorders, with recent meta-analyses estimating a worldwide prevalence rate of ADHD in children ranging from 5-7% (Hong et al., 2013; Johnston et al., 2005; Tarver et al., 2014; Wolraich et al., 2019). In the United States alone, survey data conducted in 2016 indicated that approximately 8.4% of children, ages two to 17 years were diagnosed with ADHD, which roughly equates to 5.4 million children (Wolraich et al., 2019).

Although previously conceptualized as a childhood disorder, recent research indicates that ADHD is a chronic condition with symptom onset in childhood. Recent studies indicate that the majority of children with ADHD continue to struggle with impairment into adolescence, and as many as 65% of children with ADHD display symptoms in adulthood (Hong et al., 2013; Wolraich et al., 2019; Wong et al., 2018). According to Wolraich et al. (2019) the median age of diagnosis is seven years, with approximately one-third of children receiving a diagnosis prior to the age of six years. Additionally, Wolraich et al. (2019) note that males are more than twice as likely as females to receive a diagnosis of ADHD, and males are more likely to exhibit externalizing behavior while females are more likely to have a comorbid internalizing disorder (i.e., anxiety or depression).

In addition to differences in symptom expression and prevalence rates between males and females, there is great heterogeneity among children diagnosed with ADHD. The DSM-5 criteria

outlines four presentations of ADHD: primarily inattentive (ADHD/I), primarily hyperactive-impulsive (ADHD/HI), combined (ADHD/C), and other specified and unspecified ADHD (American Psychiatric Association, 2013). In order to receive a diagnosis of ADHD, an individual must experience a minimum of six symptoms of inattention (e.g., failing to sustain attention in tasks, not listening when being spoken to directly), or six symptoms of hyperactivity/impulsivity (e.g., talking excessively, fidgeting with hands or feet) (American Psychiatric Association, 2013). Children diagnosed with ADHD have different symptom profiles and may also demonstrate different patterns of impairment across domains, including emotion regulation, social functioning, behavior (i.e., aggressive, intrusive, withdrawn), and academic functioning (Tarver et al., 2014).

In the absence of early and effective treatment, children with ADHD may experience long-term negative consequences in several domains of functioning, such as low educational achievement, occupational or interpersonal difficulties, and increased risk of substance abuse, criminal activity, and accidental injury (Hong et al., 2013; Johnston et al., 2005; Wolraich et al., 2019). While available treatment interventions may reduce the impact of ADHD symptoms and improve child functioning, they do not cure an individual of ADHD (Wolraich et al., 2019). Unfortunately, longitudinal studies demonstrate that ADHD treatments typically are not maintained over time, contributing to impairment that persists into adulthood (Wolraich et al., 2019). Thus it stands to reason that access and adherence to ongoing interventions in childhood could reduce the extent of impairment in adolescence and into adulthood.

Treatment

Treatment for ADHD has typically fallen into two broad categories: psychosocial treatments (i.e., behavioral therapy) and pharmacological treatments. Regarding psychosocial

treatments, behavioral therapy involves training adults to influence the contingencies in the child's environment to improve behavior. The goal of most behavioral therapies is to help parents and school personnel learn how to effectively prevent and respond to behaviors such as interrupting, aggression, failure to complete tasks, and noncompliance (Wolraich et al., 2019).

A second form of psychosocial treatment is training interventions, which target skill development and involve repeated practice with performance feedback over time. Although less research has been conducted on training interventions in comparison to behavioral therapy, training interventions that target organization of materials have support as well-established interventions. In addition to behavioral therapy and training interventions, there are several psychosocial treatments with limited research support including mindfulness, cognitive training, diet modification, EEG biofeedback, and supportive counseling (Wolraich et al., 2019).

The second category of treatment, pharmacotherapy, is strongly supported as a first-line treatment of ADHD throughout the literature (Prinstein et al., 2019; Vaughan et al., 2012). Pharmacotherapy consists of both stimulant and nonstimulant medications. Stimulants have historically been considered a well-established treatment for ADHD dating back to the 1970s. All stimulant medications that are currently approved for the treatment of ADHD are derived from either methylphenidate (i.e., Ritalin, Focalin) or amphetamine (i.e., Adderall) (Prinstein et al., 2019). The mechanism through which stimulants act entail enhancing the neurotransmission of dopamine and, to a lesser extent, norepinephrine. Research indicates that rates of effectiveness for each type of stimulant range from 65-75% (Prinstein et al., 2019), with approximately 75% of children responding to the first stimulant trialed, and 80-90% of children responding to the second stimulant trialed (Vaughan et al., 2012). Extended-release medications are a common trend in pharmacotherapy due to improved adherence to the treatment schedule. Regarding

adverse effects, all formulations of stimulant medications have similar profiles. Common adverse effects with stimulants are delayed sleep-onset, decreased appetite, weight loss, irritability, headaches, and abdominal pain (Prinstein et al., 2019; Vaughan et al., 2012).

Nonstimulant medications are also increasing in popularity. Atomoxetine, the first nonstimulant medication approved by the FDA for the treatment of ADHD, selectively blocks reuptake of noradrenergic neurons (Vaughan et al., 2012). Efficacy studies demonstrate significant improvement in ADHD symptoms, with a range of 58.7% to 64.1% of subjects receiving atomoxetine reporting decreased symptoms compared to those receiving a placebo. Similar to stimulant medications, there is a general profile of adverse effects that accompany nonstimulant medications, including fatigue, loss of appetite, and gastrointestinal effects (i.e., emesis, nausea) (Prinstein et al., 2019). Overall, the main impact of pharmacotherapy on ADHD is a reduction in the core symptoms of ADHD, including reducing inattention, hyperactivity, and impulsivity. Research indicates that individuals with ADHD who adhere to their medication regimen are better able to perform academically and socially (Vaughan et al., 2012).

The majority of research comparing behavioral therapy to stimulant medication indicate that although stimulant medication has a stronger immediate effect on symptoms of ADHD, parents are reportedly more satisfied with the effects of behavioral therapy as compared to pharmacological interventions (Wolraich et al., 2019). Wolraich and colleagues (2019) conducted a study examining the percentage of children and adolescents receiving treatment for ADHD and found that approximately two-thirds of the study population were taking medication and approximately half of the population received psychosocial treatment within the previous 12-months. However, nearly one-quarter of the youth with ADHD did not receive either pharmacological or psychosocial treatment after receiving a diagnosis (Wolraich et al., 2019).

Common Sense Model (CSM) Overview

Leventhal and his colleagues originally created the CSM to assess treatment adherence in adult patients with physical/medical illness (Hagger & Orbell, 2003; Lau et al., 1989). According to the CSM, individuals create cognitive representations of their illness based on social communication (i.e., what they have heard from others), authoritative sources (i.e., doctor, guardian), and personal experiences with the illness (Hagger & Orbell, 2003). The original CSM includes four components that influence how individuals make sense of, and cognitively represent, their illness (Hagger & Orbell, 2003). The *identity* component involves creating a label for the illness and an understanding of the symptoms associated with the illness. The *timeline* component involves beliefs about the course of the illness, including the estimated duration (i.e., acute or chronic). The *consequences* component encompasses one's beliefs about the short-term and long-term impacts of the illness on quality of life and general functioning. Lastly, the *cause* component covers factors that precipitate illness onset (Lau et al., 1989). Examples of *causes* include biological (i.e., virus, heritability), emotional (i.e., stress, depression), environmental (i.e., chemicals, toxins), and psychological (i.e., personality) factors (Hagger & Orbell, 2003).

In 1983, Lau and Hartman expanded on the CSM adding the *controllability* dimension, which reflects differences in perceptions associated with efficacy in coping with the illness, as well as effectiveness of treatment (Lau et al., 1989). Overall, results from this study indicate that the most commonly mentioned CSM facets were *identity* (99.5% of participants) and *timeline* (72.1% of participants) when individuals were describing a common illness (i.e., cold, fever). Participant use of the remaining three facets, *consequences, cause, and controllability,* to describe common illnesses ranged from 45.8% to 53.1%. Lastly, approximately 41.5% of participants generated information about their illnesses that did not align with any of the CSM

facets, thus these responses were placed into an "other*"* category (Lau et al., 1989). Ultimately, the cumulative use all five of the CSM facets indicated the widespread nature of each component of the CSM. However, the relatively large percentage of responses that were coded as "other," suggested that additional facets may need to be added to the CSM to better encompass one's cognitive representations of an illness.

In addition to providing extended support for the core cognitive components of the CSM, Lau et al. (1989) identified several behavioral outcomes correlated with different illness representations. For example, they found that people who have strong *identity* and *controllability* representations had a greater likelihood of visiting a doctor both when displaying symptoms and for asymptomatic checkups. Additionally, research has found that individuals who interpreted the reason for getting sick and recovering to be *controllable* had greater beliefs in self-control over health outcomes (Lau et al., 1989). In light of these findings, Leventhal's model implies a causal relationship, in which illness cognition exacts an effect on one's coping behavior (Hagger & Orbell, 2003).

In 2002, Moss-Morris and colleagues sought to address some of the gaps (as previously mentioned) in the five-facet CSM, and proposed two additional facets to enhance the ability of the CSM to conceptualize one's illness representations. *Emotional representation*, the sixth CSM facet measures one's emotional response to an illness/diagnosis. This facet was added due to the idea that humans develop parallel cognitive and emotional representations in response to an illness or health threat. Lastly, *coherence* was added as the seventh, and final, facet of the CSM, which measures one's understanding of the illness. Similar to the original five facets, Moss-Morris and colleagues (2002) believed that these final two facets also impact one's behavioral response to an illness. Specifically, the authors proposed that *emotional representations* give rise

to coping behaviors (i.e., problem-coping versus emotion-coping), and *coherence* plays a role in one's adjustment to the illness.

Although the CSM was originally developed to identify adult patients' perceptions of physical illness, there has been increased interest in applying the CSM to psychological health. Wong et al. (2018) applied the CSM to youth with ADHD and their parents by conducting a review of studies examining perceptions of ADHD among diagnosed children and their caregivers. They found studies in support of all seven facets of illness representation as it applies to ADHD, and noted that the existing research focuses more on the treatment *controllability* dimension as compared to the other dimensions (i.e., *identity, cause, timeline, consequences*). Following is a brief review of the findings in regard to parent perceptions of their child's ADHD symptoms and diagnosis.

Considering the first dimension, *identity*, Wong et al. (2018) found in their review that although the majority of both parents and children were aware of the core symptoms of ADHD, there was minimal agreement in most studies between parent and child perceptions of symptoms. Among parents of children with ADHD, ratings of child inattention, but not hyperactivity/impulsivity, were associated with the use of mental health services. In contrast, hyperactive/impulsive symptoms, but not inattentive symptoms were related to parenting stress level (Wong et al., 2018).

Regarding the second CSM dimension, *cause*, research examining parents' explanations for a child's ADHD diagnosis yields inconsistent results. Thus, while some parents attribute their children's ADHD to biological causes (i.e., genes, chemical imbalance), other parents attribute inattentive, hyperactive, and oppositional behavior as being more internally caused, less controllable by the child, and more stable, as compared to parents of children without a

behavioral disorder (Wong et al., 2018). Studies suggest that parent etiological beliefs of biological causes are related to their beliefs of treatment acceptability and efficacy. For example, parent beliefs in biological causes of ADHD are linked to their willingness to trial pharmacological treatment (Lin & Chung, 2002; Yeh et al., 2014). However, one study found that parent beliefs in non-biological causes (i.e., parents being inconsistent with rules/consequences, poor discipline strategies) did not predict their treatment preference and were not significantly related to the use of psychotherapy as a treatment modality (Johnston et al., 2005). Therefore, taking into account parent perceptions of ADHD, particularly biological etiology of the disorder, may increase treatment acceptability, thus increasing overall adherence rates (Wong et al., 2018).

Considering the third CSM dimension, *timeline*, research is again variable with some studies finding that parents view ADHD as a chronic disorder, while other studies find that parents view ADHD as a temporary/acute condition (Wong et al., 2018). Although Wong et al. (2018) did not find any research examining the implications of parent perceptions of the timeline of ADHD and treatment outcomes, they note a study which examined timeline and perceptions of treatment outcome among parents of children with autism spectrum disorder (ASD). Al Anbar et al. (2010) found that parent perceptions of ASD as a cyclical/episodic disorder *(*i.e.*, timeline)* were associated with the use of medication and information resources. Additionally, parent perception of an unpredictable *timeline* predicted an increased use of medication and a decreased use of behavioral interventions for ASD (Al Anbar et al., 2010).

Several studies indicate that parents perceive the fourth CSM dimension, *consequences*, of ADHD in several domains of their child's life, including learning difficulties, behavioral problems, and difficulties in peer relations (i.e., Caci et al., 2014; Jiang et al., 2014). Additional

findings suggest that parents of children diagnosed with ADHD perceive considerable parent-focused *consequences*. For example, parents report challenges in meeting the needs of their child, increased physical and emotional strain on themselves (i.e., tiredness, frustration, helplessness), difficulties in the parent-child relationship, and stress on the marital relationship (Wong et al., 2018). Wong et al. (2018) note two studies that examined perceptions of consequences on treatment outcomes. Jiang et al. (2014) found a positive correlation between mothers' perceived level of child impairment from ADHD and their perceived acceptability and efficacy of combined treatments (i.e., medication and behavioral interventions), and Brinkman et al. (2009) found parent perceptions of child impairment and acceptance of child ADHD diagnosis was associated with medication use.

Controllability, the fifth dimension of the CSM, is further divided into beliefs about treatment control and personal control. Treatment control refers to one's beliefs about the efficacy of treatment interventions to reduce symptoms of ADHD (Wong et al., 2018). Toomey and colleagues (2012) conducted a study examining treatment control and found that although 86% of parents of children with ADHD perceived medication to be effective, approximately 21% of them discontinued their child's medication. Additionally, a study conducted by Johnston et al. (2008) found that mothers rated medication as more effective than behavioral strategies for their own children (males) with ADHD, however they rated behavioral parent training as more acceptable than medication in a hypothetical scenario. Wong et al. (2018) conclude, based on their review, that the findings on parent acceptance of a treatment intervention and subsequent interest in pursuing that intervention for their child is mixed. They suggest that clinicians survey parents in regard to an array of possible interventions (i.e., medication, diet, therapy) to get a more complete view of the treatment *control* dimension.

The second division of *controllability*, personal *control*, refers to parent perceptions of their child's control over his/her symptoms of ADHD (Wong et al., 2018). A study conducted by Gerdes and Hoza (2006) found that mothers of children with ADHD attributed inattentive and impulsive behavior to less controllable and less intentional factors than mothers of children without ADHD. A second study conducted by Johnston and Leung (2001) revealed a relationship between treatment modality and personal control attributions, such that pharmacological treatment resulted in parent attributions of greater child control over ADHD symptoms, compared with behavioral treatment or the combination of medication and behavioral treatment. While Wong et al. (2018) conclude that parent perceptions of child control over symptoms of ADHD are associated with reactions to child behavior, additional research may be useful in determining factors, in addition to treatment modalities, that shape parent perceptions of child control over his/her behavior.

Regarding the sixth facet of the CSM, *emotional representations,* Wong et al. (2018) were unable to find studies that examined the implications of parents '*emotional representations* of ADHD. However, Al Anbar et al. (2010) conducted a study with parents of children with ASD and discovered that greater parent negative *emotional representations* of ASD were associated with decreased use of educational treatments for their diagnosed children. The three most common educational interventions presented to parents included Applied Behavior Analysis (ABA; behavior therapy), the Treatment and Education of Autistic and related Communication Handicapped Children (TEACCH; structured teaching program with parents implementing supervised treatment in the home setting), and the Picture Exchange Communication System (PECS; children are taught to approach and give a picture of a desired item to a communicative partner in exchange for that item) (Al Anbar et al., 2010). Therefore, this study suggests that

parent emotional responses to the disorder may influence their treatment use. However, this hypothesis remains unexplored in the context of ADHD.

The final dimension of the CSM, *coherence*, was conceptualized by Wong et al. (2018) as a parent's level of understanding/knowledge about ADHD. Overall findings from the Wong et al. (2018) review suggests that many parents perceive having an insufficient understanding of ADHD and a lack of strategies for managing their child's behavior. Although studies have not yet been conducted examining the relationship between understanding of ADHD and treatment adherence, a study examining the relationship between *coherence* in parents of children with ASD and treatment selection found that higher *coherence* was related to a greater likelihood of attending conventions to seek information about ASD (Al Anbar et al., 2010). Therefore, it may be hypothesized that self-perceived understanding of ADHD among parents of diagnosed children may influence treatment acceptability, in terms of accessing resources (Wong et al., 2018).

In sum, Wong et al. (2018) were able to identify a plethora of research to support the hypothesis that CSM attributions, originally designed to examine physical illness, also apply to mental illness. Specifically, Wong's and colleagues' review revealed that parent attributions regarding *identity, cause, consequences,* and *control* of their child's ADHD-like behavior impact their type of help seeking and treatment adherence. Although research regarding the impact of the remaining three dimensions, *timeline, emotional representations,* and *coherence*, on ADHD has not yet been conducted, Wong and colleagues summarized research that supports the impact that these three dimensions have on help seeking and treatment adherence in parents of children with ASD. In order to obtain a more comprehensive understanding of parent treatment adherence

for their children, it is important to consider other factors that are hypothesized to impact parent behavior.

Factors that Influence Treatment Adherence

Treatment adherence is defined as the extent to which a patient's behavior corresponds to the recommendations given by a healthcare provider (Safavi et al., 2019). Adherence is the result of an interaction between patient factors, diagnosis, treatment, healthcare system, and the environment (Moore & Symons, 2009; Safavi et al., 2019). Poor adherence to pharmacological treatment is well-documented among adults in medical literature, however treatment adherence has only recently begun receiving attention in the pediatric population and behavioral intervention literature. Research and understanding about treatment adherence has followed a similar path as that of the CSM, with initial focus on the construct of treatment adherence in the adult health/medical literature and followed by studies considering adult adherence to mental health (both behavioral and psychopharmacological) treatment. Few research studies have investigated pediatric treatment adherence to mental health treatment, and even fewer studies have examined parent adherence for child mental health interventions (e.g., Mucka et al., 2017).

Bennett and colleagues (1996) conducted one such study that examined parent adherence to mental health recommendations for counseling and a medication evaluation for children with ADHD. The goal of this study was to examine whether parent rates of adherence varied by treatment type. Overall, results from this study indicated a significant difference in parent adherence depending on the type of recommendation, with 72% of parents pursuing a medication evaluation and only 54% pursuing counseling. Similarly, Moore and Symons (2009) examined parent adherence for child mental health interventions in a sample of caregivers of children with ASD. Results of this study were congruent with Bennett's et al. (1996) study, with caregivers

reporting significantly greater adherence to psychopharmacological treatment compared to behavioral treatment (i.e., behavioral parenting interventions). Specifically, Moore and Symons (2009) found an average adherence rate of 84.1% to psychopharmacological treatment and 75.8% for behavioral treatment recommendations.

In addition to the type of treatment, MacNaughton and Rodrigue (2001) examined several other factors likely to influence parent adherence to recommendations received during a child's psychological evaluation. Recommendations were divided into four groups: psychological services, school-based recommendations, professional-nonpsychological (i.e., medical appointment), and active self-help (i.e., parent support group, implement home-based behavior management strategies). Unlike the previously mentioned studies, children sampled in this study presented with a variety of behavioral difficulties, such as ADHD, behavioral disturbance, adjustment disorder, developmental disability, learning difficulty, anxiety, depression, and psychosis. The researchers examined six key variables presumed to be predictive of parent adherence to recommendations included in a psychological evaluation, including demographic variables, perceived severity of the child's behavior, parents' recall of the recommendations, parent satisfaction with the psychological evaluation, locus of control, and perceived barriers to following through with the providers' recommendations. Regarding the type of recommendation given, MacNaughton and Rodrigue (2001) found that adherence rates to psychological services were significantly less than adherence to the remaining three categories (school-based recommendations, non-psychological professional, self-help/support groups). Additionally, the only variable that significantly predicted overall adherence was the number of perceived barriers to recommendation follow-through, with the most commonly reported barriers being lack of

access to resources and negative attitudes toward healthcare providers or beliefs that the recommended treatment will not be helpful (MacNaughton & Rodrigue, 2001).

Barriers to Seeking Treatment

Three categories of barriers have been suggested as important predictors of treatment utilization: *situational barriers,* such as time and location inaccessibility, lack of information, and unresponsiveness or disrespectful providers; *family barriers*, including socioeconomic status (SES), ethnicity, parents' educational level, and parents' mental health status; and *child barriers,* such as age of the child and the severity of the referral issue (Miller & Prinz, 2003). Recently, researchers have discovered that parent pretreatment cognitions about treatment and attributions about seeking treatment may serve as additional barriers associated with treatment adherence (Miller & Prinz, 2003).

Intervening soon after a child begins to display behavioral or mental health difficulties can interrupt the negative trajectories that may occur if the problem remains untreated. For younger children, parents/caregivers serve as the gatekeepers to services, thus parents carry the responsibility of recognizing the child's mental health difficulties, pursuing treatment, and continuing services until improvement is noted (Alonso & Little, 2019). This process of *help-seeking* refers to searching for services, consultation, and/or the use of mental health services (Johnston & Burke, 2020). The first step of the help-seeking process, problem recognition, has been identified as the strongest predictor of use of mental health services after accounting for psychopathology (Johnston & Burke, 2020). Typically, a parent's assessment of child behavior varies based on perceived etiology, severity, and stability of the problem. Unfortunately, rate of help-seeking and service utilization often fails to match rates of problem recognition.

Parent, family, and child characteristics, such as gender and ethnicity, can impact engagement in mental health services following problem recognition. For example, Bussing et al. (2003) found that females are routinely less likely to receive treatment for ADHD as compared to males, even after controlling for symptom level. Specifically, males were 5.8 times more likely than females to be evaluated for ADHD in a sample of children screened "at risk" for the disorder. Bussing et al. (2003) also found that parents tend to regard ADHD symptoms in females as more atypical than in males, contributing to perceptions of greater sigma associated with seeking services for ADHD symptoms in females versus males. Therefore, stigma is posited as a major barrier to services for females who display symptoms congruent with ADHD.

In addition to child gender impacting help-seeking, race and ethnicity have been identified as impacting mental health services. According to Johnston and Burke (2020), African American children with externalizing disorders (including ADHD) were less likely to receive mental health services, after adjusting for parent income and education level, and more likely to receive school services, complementary medication, or services through the juvenile justice system, compared to White and Hispanic children. Additionally, White children were 2.9 times more likely to receive an ADHD evaluation compared to African American children, after controlling for SES, health insurance coverage, and symptom severity. Hispanic parents were also less likely to seek mental health treatment for their children compared to White children. These findings suggest that disparities in mental health service engagement associated with ethnic/cultural differences may be occurring early in the help-seeking process (Johnston & Burke, 2020).

Stigma associated with mental health difficulties may also influence a parent's willingness to seek out mental health services for his/her child. According to Johnston and Burke (2020), parents of children with behavioral difficulties report fears of being blamed or judged if they

decide to seek help. Research conducted by Dempster et al. (2013) suggests that stigma moderates the relationship between a child's behavioral symptoms and parent help-seeking behaviors. For example, at lower levels of child behavior symptoms, perceived stigma decreases a parent's likelihood to attend parenting classes, while the opposite was true at higher levels of child behavior symptoms (i.e., concerns about stigma are less likely to interfere with attending a parenting class). This suggests that high levels of behavioral problems may outweigh the stigma of receiving mental health treatment (Dempster et al., 2013).

Parent Attributions

Parent attributions encompass two of the facets of the CSM, including *timeline* (stability) and *controllability* (locus of control). Alonso and Little (2019) conducted a study to examine the impact of parent attributions on help-seeking behavior. Parents completed surveys regarding the extent to which they believed their child's behavioral and emotional difficulties are internal to the child's disposition (internal attributions), intended on purpose (intentional attributions), and resistant to change (stable attributions). The results revealed that parents who had not sought help for their child's behavior perceived significantly more barriers to help-seeking and viewed their child's behavior as intentional, compared to parents who sought services. Alonso and Little (2019) also found a positive relationship between perceived barriers to help seeking and internal attributional beliefs, suggesting that parents who attribute behavior difficulties to their child's personality or disposition tend to also perceive more barriers to help-seeking.

In addition to the initial role that parent attributions play in help-seeking, understanding parent attributions regarding child symptoms of ADHD, causes, and treatments for the disorder is important because of the central role parents play in selecting and engaging in treatment for their children (Johnston et al., 2005). Research has found that parents of children with ADHD

often have unique attributions regarding their children's behavior. Chen et al. (2008) asked parents of children with ADHD to complete a vignette-based questionnaire to measure their causal attributions regarding ADHD symptoms. Each vignette described a different ADHD presentation; for example, one vignette described a child with primarily inattentive behavior and one described a child with primarily hyperactive/impulsive symptoms. Results from this study found different parent attributions associated with inattentive versus hyperactive/impulsive child symptoms. Specifically, parents more commonly attributed inattentive behavior to an internal locus of control (caused by something within the child) and rated inattentive behavior as more stable (more likely to occur in the future) compared to hyperactive or impulsive child behaviors (Chen et al., 2008). In contrast, parents were more likely to view hyperactive/impulsive behaviors as external (i.e, due to situational factors) and more temporary and/or likely to change over time (Chen et al., 2008). Although research suggests that parents of children with ADHD have a unique attributional pattern regarding their children's behavior, further research is needed to understand the impact of these attributions on treatment.

A study conducted by Johnston et al. (2010) focused on the effects of maternal pre-treatment causal attributions of child behavior on the acceptability of behavioral parent training treatment. A sample of 101 mothers of children with ADHD were asked to complete the Written Analogue Questionnaire as a measure of pre-treatment attributions of their child's behavior, and a treatment evaluation inventory to assess mothers' willingness to engage in parent training (acceptability). Results of this study found that maternal attributions of child ADHD behavior were significantly related to their rated acceptability of parent training treatment. Specifically, mothers who perceived their child as having a modest degree of control over their actions rated behavioral parent training treatment as acceptable, as compared to mothers who attributed their

child's behavior to external factors. However, a mother's acceptability of treatment did not predict her actual engagement in parent training treatment overall. Thus, the researchers suggest that while attributions may play a small factor in treatment engagement, there are likely other factors that are more important in treatment engagement (Johnston et al., 2010).

Interestingly, research supports a bi-directional relationship between parent attributions and treatment selection. Thus, while parent attributions likely shape a parent's preferred type of treatment, the type of treatment a child receives also influences his/her parent's attributions. For example, Gerdes and Hoza (2006) found that when a child receives pharmacological treatment, mothers attribute positive child behaviors as more global and stable, and view negative child behaviors as more externally caused (less global and stable). Similarly, Johnston and Leung (2001) found that behavioral treatments were associated with parent attributions of lower child control (greater external locus) and greater stability, as compared to treatments without a behavioral component.

Taken together, research has found that parents of children with ADHD have unique attributions regarding their children's behavior that impact treatment selection. For example, maternal pretreatment attributions of greater child control over behavior are linked to greater ratings of acceptability of parent behavioral training (Johnston et al., 2010). Additionally, several studies (i.e., Gerdes & Hoza, 2006; Johnston & Leung, 2001) have identified a bi-directional relationship between parent attributions and treatment engagement, suggesting that while parent attributions are associated with initial treatment selection, participation in treatment may result in changes in parent attributions.

ADHD Knowledge

In addition to parent attributions, research suggests that accurate knowledge about ADHD and beliefs about causes and treatment for ADHD contribute to treatment enrollment and adherence. ADHD knowledge aligns with the *coherence* facet of the CSM, thus in the context of ADHD it assesses a parent's understanding of their child's ADHD diagnosis. Research conducted by Corkum et al. (1999) evaluated the impact of parent knowledge about ADHD and opinions about treatment on adherence to pharmacological and behavioral interventions (parent training and parent support group). Parents in this study participated in a diagnostic interview and completed a measure that assesses parent knowledge and opinions about ADHD symptoms, characteristics, causes, diagnosis, and treatment. Corkum et al. (1999) found that the behavioral interventions (parent training and parent support group) were viewed more positively than pharmacological treatment. It should be noted however that this study was conducted more than 20 years ago, and that medication for ADHD, as well as parent attitudes about pharmacological treatment, have likely changed significantly.

Corkum et al. (1999) also found that a higher level of accurate knowledge about ADHD predicted more positive opinions about behavioral interventions. However, knowledge about ADHD was not significantly correlated with parent opinions about pharmacological treatment. Corkum et al. (1999) found that parents who had high levels of accurate knowledge about ADHD and a positive opinion about medication were more likely to attend at least one parent group and trial their child on medication. Considering treatment adherence, Corkum et al. (1999) found that 57.7% of parents adhered to treatment (defined as attending more than 50% of parent sessions and/or taking more than 50% of prescribed medication) over the course of 12 months. However, adherence rates for both behavioral and pharmacological treatments were not

significantly related to parent knowledge of ADHD or opinions about treatment (Corkum et al., 1999). In sum, these findings suggest that the relationship between parent knowledge about ADHD and acceptability of treatment is inconsistent. Particularly, while a higher level of accurate knowledge about ADHD was positively correlated with the acceptability of behavioral interventions, behavioral interventions also had lower enrollment and adherence rates as compared to pharmacological interventions. Corkum et al. (1999) suggest that while ADHD knowledge and treatment acceptability are important in treatment enrollment, other factors also impact parent treatment engagement.

A study conducted by Johnson et al. (2005) sought to examine whether parent beliefs regarding ADHD and causal attributions of ADHD symptoms are associated with parent acceptance of various treatments. A total of 73 parents of children with ADHD completed a treatment history questionnaire to indicate which type of treatment, if any, their child was receiving, the ADHD Beliefs Scale to measure accuracy of parent knowledge, and the Written Analogue Questionnaire to examine parent attributions of child behavior. Johnston et al. found a great deal of variability in both the extent and accuracy of parent knowledge of ADHD, which they attribute to the sources that parents use to gain information. Johnson et al. (2005) found that parents most commonly seek information about ADHD from books (86%), medical specialists (72%), and family physicians (63%). Considering knowledge of ADHD and treatment acceptance, Johnson et al. (2005) found that parents who used more behavior management strategies scored significantly higher on the Beliefs in Behavior Management subscale of the ADHD Beliefs Scale. Similarly, parents whose children were currently medicated scored significantly higher on the Beliefs in Medication subscale. ADHD knowledge was also correlated with reports of the effectiveness of the various treatment options, such that parents

who scored higher on the Beliefs in Behavior Management subscale viewed behavior management as an effective treatment for their child (Johnston et al., 2005). The results of this study provide support for the influence of parent beliefs about ADHD on treatment acceptance, however it should be noted that parents were asked about acceptability for treatments their children were already receiving. Thus, it is uncertain how the beliefs of parents with children who have not yet received treatment would impact views of treatment acceptability.

Other Parent Factors Associated with Treatment Adherence

Results of previous research suggest that ADHD knowledge and opinions about treatment alone are not sufficient to explain varying levels of parent adherence to treatment. Bussing et al. (2012) suggest that parents balance both the costs and benefits of engaging in treatment when making a decision about seeking services. Examples of "costs" of engaging in treatment include a child's dislike of taking medication, stigma, and low self-esteem. These costs may at times outweigh the benefits, and are hypothesized to be responsible for treatment discontinuation, despite clear symptom reduction. Bussing et al. (2012) sought to assess this costs and benefits model by considering parent views regarding acceptability and effectiveness of treatment interventions, as well as the influence of potential treatment side effects on treatment adherence.

In line with their cost/benefit model, Bussing et al. (2012) found that parent perceptions regarding treatment are associated with both increased and decreased willingness to seek treatment. Specific perceptions that led to increased willingness to participate in treatment included feeling knowledgeable about a treatment and expectations of effectiveness. Likewise, anticipation of adverse reactions to medication led to decreased willingness to participate in treatment. Bussing and colleagues (2012) assessed whether a child's previous experience with treatment had an impact on present treatment participation. Results indicate that a child's

previous experience with ADHD treatment predicted increased likelihood of engaging in pharmacological treatment, however the authors failed to note whether type of ADHD treatment and/or treatment effectiveness impacted this relationship.

In summary, parent-focused factors that have been found to influence treatment selection and adherence include attributions about child behavior, knowledge about ADHD, experience with previous child treatment, and perceptions regarding costs/benefits of proposed treatment.

Consideration of Demographic Variables

Only a few studies have considered the relationship between demographic variables and adherence to treatment among children with ADHD. Pham et al. (2010) examined the influence of parent ethnicity on beliefs about the causes and treatments of ADHD, as well as whether these beliefs predicted a preference toward treatment type (i.e., pharmacological or behavioral). Participants were divided into an ethnic majority group (Caucasian, 53.8%) and an ethnic minority group (i.e., African American and Latina/o, 46.2%). Results revealed no group differences in beliefs about causes of ADHD or beliefs regarding the acceptability of pharmacological and behavioral treatments. A similar study conducted by Bussing et al. (2012) explored whether *engagement* in treatment may be impacted by ethnicity. They hypothesized that race/ethnicity would impact parent willingness to engage in treatment, as a result of differences in perceptions of treatment (i.e., helpfulness, appropriateness). However, similar to Pham et al. (2010), the results revealed that African American participants apply similar considerations towards ADHD medications as Caucasian participants.

Despite the lack of ethnic differences regarding ADHD etiology and treatment acceptability, Pham and colleagues (2010) found a difference in service utilization between groups. Specifically, ethnic *majority* parents were more likely to utilize both pharmacological

and behavioral treatments, as compared to ethnic *minority* parents who primarily utilized behavioral interventions. In referring to a previous literature review that occurred 10 years prior, Pham and colleagues (2010) suggest that ethnic minority families may be more informed about etiology and effective treatment of ADHD, however barriers continue to impact treatment utilization, particularly for ethnic minority children.

A more recent study conducted by Coker et al. (2016) also found that ethnic minority children are less likely than ethnic majority children to receive pharmacological treatments for ADHD. Coker et al. designed a longitudinal study, following children from 5th to 10th grade, to examine disparity in treatment based on ethnicity, as well as whether the main causes of disparity changed depending on the child's age. Parent-child dyads (N = 4, 297) were sampled from 10 different public school districts across the United States (i.e., Alabama, Texas, California, etc.). Coker and colleagues found that Caucasian children were both more likely to receive a diagnosis of ADHD and utilize pharmacological treatment. According to Coker et al., 19% of Caucasian children received an ADHD diagnosis by the time they were in 10th grade, as compared to 10% of African American children and 4% of Latino children. There was also a great disparity in the number of diagnosed children taking prescribed medication, such that 65% of Caucasian children with ADHD were taking medication in the 10th grade, compared to 36% of African American children and 30% of Latino children. Considering the results of both Pham et al. (2010) and Coker et al. (2016) there appears to be evidence of differences associated with child ethnicity for ADHD diagnosis and use of pharmacological interventions. However, further research is needed to explore specific social, educational, and/or financial barriers that may be contributing to this disparity.

Due to the discrepancy in prevalence rates of ADHD in males and females (3:1 ratio), it has been suggested that parent attributions regarding ADHD behaviors may differ based on child gender. As mentioned previously, Bussing et al. (2012) examined the role of child gender in initial problem identification of the help-seeking process, and found that adolescent males were 5.8 times more likely than adolescent females to be evaluated for ADHD in a sample of children screened "at risk" for ADHD. Similarly, Chen et al. (2008) also conducted a study to examine whether parent attributions of stability, globality, and locus of control differed significantly among male and female children. As opposed to Bussing and colleagues, Chen et al. examined a younger sample of children (ages 5 to 13) who previously received an ADHD diagnosis. Ultimately, Chen et al. did not find any differences in parent attributions based on child gender. The discrepancy between the Bussing et al. and Chen et al. studies is likely because Chen and colleagues used a younger sample and chose male and female participants with similar symptom severity, level of impairment, and comorbid problems. Therefore, it is likely that child gender, specifically being female, may influence identification of ADHD and initial treatment in older children/adolescents, however gender may have less influence on parent attributions after the problem has been identified (i.e., the child receives a diagnosis of ADHD).

Adherence to Assessment Recommendations

While the previously mentioned studies have examined mental health treatment adherence overall, very few studies have investigated adherence to psychological evaluation recommendations. Rather, the majority of research on adherence as it pertains to mental health has focused on treatment adherence in adults, with a smaller body of literature focused on parent adherence to child-focused mental health interventions. The goal of child assessment is to increase parent understanding of their child's functioning and diagnostic considerations, and to

provide intervention recommendations (Mucka et al., 2017). Thus, the psychological evaluation serves as a "blueprint" of sorts in detailing subsequent interventions. Although results of child evaluations are often shared with physicians and school personnel, the degree to which evaluation recommendations are ultimately implemented largely depends on parent or caregiver ability and willingness. Thus additional research and understanding of factors that influence parent adherence to child psychological evaluation recommendations has the potential to increase child access and involvement in treatment.

Two pioneer studies have examined the role of barriers in adherence to psychological evaluation recommendations. One such study, conducted by Dreyer et al. (2010), examined adherence to treatment recommendations through the barriers-to-treatment model, which asserts that failure to seek child services and/or follow through on assessment recommendations is due largely to perceived barriers. Additionally, Dreyer et al. (2010) considered parent stress level and perceived severity of child behavior as potential factors associated with compliance to assessment recommendations.

Dreyer et al. (2010) utilized a sample of parent-child dyads who were referred to a university-based ADHD clinic due to concerns of inattentive and/or hyperactive behavioral difficulties. Parents completed a measure of parenting stress and a behavior rating scale to assess range and severity of child behavior difficulties. Parents were interviewed by phone 4-6 weeks following their child's evaluation and asked the extent to which they followed through with each recommendation in the psychological evaluation, and also asked to rate the extent to which common barriers (i.e., transportation, insurance, time, lack of resources, etc.) prevented them from following through with each recommendation. Results revealed an average rate of adherence of 70% for evaluation recommendations overall, as well as a significant difference in

rates of parent adherence among different types of assessment recommendations. Specifically, parents more readily adhered to recommendations encouraging self-help (79% adherence rate) and consultation with a non-psychological professional (78% adherence rate), as compared to recommendations for school-based interventions (61% adherence rate) and psychological service recommendations (58% adherence rate) (Dreyer et al., 2010).

Regarding the impact of perceived barriers on adherence to assessment recommendations, Dreyer et al. (2010) found that 92.5% of participants reported encountering at least one barrier in following through on each recommendation, and that the most commonly reported barrier to adherence was the lack of time to carry out the recommendation. Parent perceived severity of the child's behavior was not significantly associated with rates of adherence to assessment recommendations. However, in line with previous research, parent stress was positively associated with adherence to assessment recommendations. Dreyer et al. (2010) recommended that future research considering adherence to psychological evaluation recommendations increase the time between feedback and follow-up, and also suggested more focus on the range and specific influence of different types of barriers.

Mucka et al. (2017) sought to examine the utility of child assessments by examining parent satisfaction with the assessment process, the extent to which parents adhered to assessment recommendations (and relationship with satisfaction), and barriers to adhering to assessment recommendations. Similar to Dreyer et al. (2010), Mucka et al. (2017) utilized a sample of parent-child dyads who were seeking an ADHD evaluation through a university-based psychology clinic. Mucka et al. (2017) conducted follow-up interviews one year after the child's assessment and feedback. During the follow-up interview, parents were asked to rate the extent to which they adhered to assessment recommendations, as well as barriers they encountered in

adhering to recommendations. Barriers were coded into four distinct categories: limited resource barriers, priority barriers, stigma barriers, and relationship/personal challenges barriers. Adherence to assessment recommendations was measured on a 3-point Likert scale (did not try the recommendation, tried the recommendation at least once/partial adherence, fully adhered to the recommendation/followed the recommendation for longer than one month). Type of recommendation was coded into three categories: home (i.e., home activities, parent education), school (i.e., tutoring, behavior report cards), and other/professional (i.e., extracurricular activities, medication, counseling). Parent satisfaction with the assessment was measured via a 13-question survey using a four-point Likert scale ranging from "very unsatisfied" to "very satisfied" (Mucka et al., 2017).

Consistent with Dreyer et al. (2010), Mucka et al. (2017) reported an average parent adherence rate of 71.5%. They also found that adherence was associated with the overall number of barriers and type of recommendation. Overall, the most commonly reported barriers were priority barriers (i.e., lack of time, didn't find the recommendation important, inconvenient), which were reported 22% of the time. In contrast to Dreyer and colleagues' (2010) study, Mucka et al. (2017) reported that adherence rates were greatest for school recommendations (64.1% adherence rate) and the lowest for other/professional recommendations (35% adherence rate). Regarding parent satisfaction with their child's assessment, results indicate that parents were highly satisfied overall with the assessment process, however there was no significant association between satisfaction with the assessment and rates of adherence to assessment recommendations (Mucka et al., 2017).

Despite differences in length of time between evaluation and follow-up (4-6 weeks versus one year), Dreyer et al. (2010) and Mucka et al. (2017) both found an adherence rate of

approximately 70% of recommendations provided. Both studies also found lower rates of compliance for professional or psychological services as compared to other categories of recommendations. Of interest, Mucka et al. (2017) reported the highest level of compliance with school-based recommendations, whereas this was the category with the lowest level of compliance in the Dreyer et al. (2010) study. However, in both studies compliance with school-based recommendations was approximately 60%. This suggests a large discrepancy between adherence to other types of recommendations, such as non-psychological professional services, in which Dreyer et al. reported an adherence rate of 78% and Mucka et al. reported 35% adherence rate. It is likely that this discrepancy in adherence to non-psychological professional services is the result of the greater average number of barriers that were reported by parents in the Mucka et al. study.

Both Dreyer et al. (2010) and Mucka et al. (2017) found support for the barriers to treatment model, with parents endorsing an average of 2.6 (Dreyer et al., 2010) and 4.8 (Mucka et al., 2017) barriers in each study. Therefore, one of the key findings from both of these studies is the influence of barriers on treatment adherence. Both studies also noted differences in adherence based on type of recommendation, with lower adherence for child psychotherapy and medication versus other types of interventions. Mucka et al. (2017) noted that psychotherapy and medication are typically met with stigma in the community, therefore the authors suggest that future research should examine the role of stigma in the assessment process. Mucka and colleagues (2017) posit that further research is needed to better understand how parents react to their child's diagnosis of ADHD, as well as how these reactions interact with the psychological assessment process.

Present Study

To our knowledge, only two studies have been conducted examining parent adherence to assessment recommendations. Both studies considered number of barriers and types of recommendations. Dreyer et al. (2010) considered the possible influence of several parent characteristics including parent age, education, family income, and parent stress, and found support only for parent stress in predicting rates of adherence. Dreyer and colleagues (2010) also considered parent ratings of child behavior and did not find that perceived severity of child behavior predicted compliance. Mucka et al. (2017) considered child ethnicity and found that rates of compliance did not differ for African American versus Caucasian parents.

In addition to these studies examining adherence with assessment recommendations, research examining parent compliance with child-focused treatment has found support for both parent attributions and parent knowledge of ADHD to predict level of engagement in treatment. For example, Corkum et al. (1999) found ADHD knowledge to be correlated with parent views of treatment acceptability, which together impacted initial enrollment in treatment. Similarly, Johnston and Leung (2001) and Johnston et al. (2005) found that pretreatment parent attributions impact initial parent treatment preferences. Johnston et al. (2005), in particular, conducted a study that examined the impact of ADHD knowledge and parent attributions simultaneously on parent compliance with child treatment. Results of this study indicate that parent beliefs predicted some treatment choices (i.e., biological causes predicted pharmacological treatment). Regarding attributions, Johnston et al. (2005) discovered that parents who used less empirically supported treatments (i.e., diet/vitamin treatments) were more likely to see ADHD behaviors as stable and internal to the child. Although parent attributions have been found to consistently

predict engagement in child-focused treatment, there is a currently a lack of research examining the influence of parent attributions on adherence to psychological assessment recommendations.

One purpose of the present study was to determine whether some of the factors that impact help-seeking and treatment adherence (i.e., cognitive conceptualization, attributions, ADHD knowledge) also impact parent adherence to assessment recommendations. The present study used a similar research design as Dreyer et al. (2010) and Mucka et al. (2017), conducting a follow-up interview to assess for recommendation adherence rates and barriers in adhering to recommendations which have been found to play a role in parent adherence to recommendations. This study also considered parent stress level, parent attributions of child behavior, parent beliefs and knowledge about ADHD causes and treatment, and several child and family factors including child age and ethnicity, problem severity, and family income.

Based on the relevant literature, the following hypotheses are offered:

1. Based on help-seeking literature, it was predicted that parent attributions of higher child controllability will be associated with lower adherence to assessment recommendations overall (Alonso & Little, 2019). Consistent with previous research (i.e., Mucka et al. 2017, Dryer et al., 2010), it was also predicted that barriers to treatment (likely to result in lower treatment controllability) will be significantly associated with overall adherence to treatment recommendations.
2. Consistent with Corkum et al. (1999) it was predicted that higher caregiver scores on the ADHD Beliefs and Attitudes Scale (greater accuracy of knowledge about ADHD) will be associated with greater adherence to assessment recommendations.
3. It was predicted that ADHD knowledge will be positively correlated with parent attributions of stability (i.e., view of ADHD as a neurodevelopmental disorder).

4. Parent interest in help-seeking at the time of feedback will be positively correlated with adherence to assessment recommendations.
5. ADHD knowledge will predict adherence to assessment recommendations after accounting for perceived number of barriers.

METHOD

Participants

Eighty-one caregivers whose children were evaluated for Attention Deficit/Hyperactivity Disorder at a university-based clinic consented to participate in the study, and completed the initial phase of the study. Data on parent adherence to treatment recommendations was obtained through a follow-up phone call approximately 8-10 weeks following the initial phase of the study. Forty-six participants (57%) were lost to follow up, most commonly because they did not respond to voicemail messages. An independent sample t-test comparing the participants who completed the follow-up interview to those who did not complete the follow-up interview demonstrated a significant effect for a second diagnosis $t(71) = 2.06$, $p = .04$, $d = 0.5$. This indicates that participants who completed the follow-up interview were less likely to have a child who was diagnosed with ADHD and a comorbid diagnosis. There were no significant group differences for ethnicity, income, an ADHD diagnosis, externalizing behavior, internalizing behavior, interest in help seeking, or ADHD knowledge.

The sample used for this study included 35 caregivers (biological mothers) of children (24 male, 11 female) between the ages of 6 and 11 years old ($M = 92.97$ months, $SD = 18.09$ months) referred for an ADHD evaluation between 2019 and 2022. The caregivers in the present study had an average of 13 years of education ($M = 13.18$ months, $SD = 1.89$). Similar to the demographics of the community, the majority (91.4%) of children were identified as Caucasian; the remaining children identified as Biracial (5.7%) or Other (2.9%). Nearly half (48.6%) of participants reported an annual income of $30,000 or less; 22.8% reported a yearly income between $30,001 and $60,000, and 25.7% reported an annual income over $60,000. Of the participants included in the present sample, 82.8% of children met DSM-5 diagnostic criteria for

an ADHD diagnosis (62.9% ADHD-combined type, 8.6.% ADHD-not otherwise specified, 8.6% ADHD-inattentive type, and 2.9% ADHD-hyperactive type). Additionally, 71.4% of the children met criteria for a diagnosis in addition to ADHD (e.g., ODD, learning disorder, anxiety and/or mood disorder). The most common comorbid diagnosis was ODD, with 57.1% of children diagnosed with ADHD also meeting diagnostic criteria for ODD. Five of the parents who participated in the study had children who did not meet criteria for ADHD; four of those children were diagnosed with ODD, and one with a learning disability. Regarding medication, 88.6% of children were never on medication, or not on medication at the time of the evaluation, and 5.7% of children were on medication for ADHD-like symptoms at the time of testing. The remaining 2.9% of children were on currently on medication to treat symptoms not related to attention and hyperactivity difficulties. See Table 1 for participant demographics.

Table 1

Diagnosis and Demographic Information of Child Being Evaluated

Variable	N	%	M	SD	Range
Child Gender					
Male	24	68.6%			
Female	11	31.4%			
Child Age (in months)			92.5	18.39	71-131
Child Ethnicity					
Caucasian	32	91.4%			
African American	0	0%			
Hispanic	0	0%			
Biracial	2	5.7%			
Other	1	2.9%			
Annual Family Income					
Less than $30,000	16	36.1%			
$30,000 to $60,000	8	22.8%			
More than $60,000	9	25.7%			
Did not provide info	1	2.9%			

Child ADHD Diagnosis					
ADHD-combined type	22	62.9%			
ADHD-inattentive type	3	8.6%			
ADHD-hyperactive type	1	2.9%			
ADHD-NOS	3	8.6%			
No ADHD Diagnosis	5	14.3%			
Second Diagnosis					
ODD	20	57.1%			
Anx/Dep	1	2.9%			
Learning Disability	3	8.6%			
Other	1	2.9%			
No Second Diagnosis	9	25.7%			
Third Diagnosis					
ODD	2	5.7%			
Dep/Anx	4	6.1%			
Cognitive Impairment	1	2.9%			
Learning Disability	4	11.4%			
Other	3	8.6%			
No Third Diagnosis	19	54.3%			
Parent BASC					
Internalizing			62.7	11.89	36-92
Externalizing			70.44	14.25	41-99
Medication					
Not on Medication	30	85.7%			
On Medication	2	5.7%			
Not on ADHD Med for testing	1	2.9%			
On other Medication	1	2.9%			

Note. ADHD-NOS = Attention-Deficit/Hyperactivity Disorder Not Otherwise Specified;

ODD = Oppositional Defiant Disorder, Anx/Dep = Anxiety or Depression

Measures

Measures Included in the ADHD Assessment Battery

The assessment battery used in the ADHD clinic includes a DSM-5-based clinical interview with a parent or caregiver, a developmental history questionnaire, and several questionnaires completed by the child's parent/caregiver and current teacher. Both parents and

teachers complete a broad range behavior rating scale, a measure of executive functioning, and an ADHD symptoms questionnaire. Parents also complete two parenting focused measures, and teachers complete a measure assessing the child's work/study skills and academic performance. Child-focused measures include a computerized test of attention, a measure of academic achievement, and a brief measure of intellectual ability. For the present study, demographic information including child ethnicity, parent age and education, and family income was collected from the developmental questionnaire. In addition, perceived extent of child behavior difficulty (from the Behavior Assessment System for Children-3; Reynolds & Kamphaus, 2015) and child diagnosis was obtained from measures administered as part of the child's ADHD evaluation.

Behavior Assessment System for Children, Third Edition (BASC-3) — PRS

The Behavior Assessment System for Children, Third Edition (BASC-3) is a 130-item behavior rating scale that measures social/emotional, adaptive, and problem behaviors in the home setting (Reynolds & Kamphaus, 2015). Parents are asked to rate the frequency with which their child displays the behavior described by each item on a 4-point scale (*never, sometimes, often, almost always*). The BASC-3 is composed of four composite scales: externalizing problems, internalizing problems, behavioral symptoms index, and adaptive skills index. The Externalizing composite scale is composed from the hyperactivity, aggression, and conduct problems clinical scales. The Internalizing composite includes the anxiety, depression, and somatization clinical scales. The Adaptive Skills composite includes the adaptability, social skills, functional communication, and activities of daily living subscales (Reynolds & Kamphaus, 2015). The Behavioral Symptoms Index includes the hyperactivity, aggression, depression, attention problems, atypicality, and withdrawal clinical scales. For the purposes of this study, means on the Externalizing and Internalizing Problems composite scales were

presented to describe the sample in terms of parent/caregiver perceptions of the severity of their child's behavior difficulties. The BASC-3 demonstrates good psychometrics properties, with mean composite scale internal consistencies for children (ages six to 11) ranging from .92 to .96 (Reynolds & Kamphaus, 2015).

Developmental Questionnaire

This questionnaire solicits sociodemographic information (i.e., parent and child age, ethnicity, education level), child educational history and academic performance, birth/developmental history, child health functioning, current medication use, family psychiatric history, and child mental health history (i.e., previous psychological diagnoses and mental health service utilization). For the present study, information regarding child ethnicity, family income, maternal education level, child gender, and age was used to describe the sample. In addition, preliminary analyses will explore the possible relationship between demographic variables and rate of assessment recommendation adherence.

Research Measures

Adherence Telephone Interview Form (ATIF)

MacNaughton and Rodrigue (2001) developed the ATIF for use in their study examining parent compliance to recommendations given during their child's psychological evaluation. The original ATIF begins with an explanation of what the interview will entail. Next the interviewer reads the first recommendation from the psychological evaluation to the caregivers and asks if he/she has completed the recommendation. Caregivers are then provided a list of common barriers (*didn't think it would help, no longer a problem, resources not available in the community, transportation, insurance, time, and forgot to do it*) and they are asked to indicate if any of the provided barriers made it difficult for them to complete the recommendation. This

process is repeated for each recommendation provided in the psychological evaluation (MacNaughton & Rodrigue, 2001).

Similar to Dreyer et al. (2010), the ATIF was modified slightly for the present study to assess compliance with recommendations as a continuous, rather than categorical, variable. The ATIF begins with a statement about confidentiality and consent, and proceeds to provide an explanation of what the interview will entail. The modified version of the ATIF asks caregivers to identify on a 5-point Likert scale how important they perceived each recommendation to be (1 = not important; 5 = extremely important). Additionally, instead of the question "did you complete this recommendation," each caregiver was asked to rank on a 5-point Likert scale how much they believe they followed through with the provided recommendation (1 = not at all; 5 = completely). Based on previous research conducted by Mucka et al. (2017), recommendations were grouped into three broad categories: home (i.e., parent education, home-school integration, home monitoring/behavior plans), school (i.e., communication with teachers, tutors, accommodations provided by the school, special education recommendations), and other/professional (extracurricular activities, medication, therapy referrals, non-psychology referrals). Rates of compliance based on type of recommendation will be presented in descriptive analyses. See Appendix D for modified ATIF.

Given the small sample size and variability in number of recommendations, we calculated adherence based on the four most common recommendations. Those recommendations include: reading the information provided in the feedback session (n = 33), discussing the implementation of a behavior report card with the school (n = 27), enrolling child in an extracurricular activity (n = 32), and meeting with a physician to discuss a trial of

medication (n = 27). Average number of barriers was also calculated based on these 4 primary recommendations.

ADHD Knowledge

The ADHD Beliefs and Attitudes Scale is a 27-item questionnaire used to assess parent's beliefs about the causes of and treatments for ADHD. This questionnaire was originally developed for use in a study assessing parent attributions/beliefs and treatment choices (Johnston et al., 2005). Parents are asked to rate how much they agree with each statement on a 7-point Likert-type scale, ranging from one (disagree) to seven (agree). The ADHD Beliefs and Attitudes Scale includes subscales assessing beliefs in behavior management, beliefs in medication, beliefs in psychological causes/treatments, and beliefs in diet/vitamin treatments. Each scale has shown good internal consistency with alphas ranging from .71 to .79 (Johnston et al., 2005). For the present study, ten items from the ADHD Beliefs and Attitudes Scale that include content supported by research regarding the symptoms, causes, behaviors, and treatments associated with ADHD (i.e., "clear and consistent rules and consequences are helpful in treating children with ADHD") were used to calculate ADHD knowledge. The 27-item ADHD Beliefs and Attitudes scale was given to participants at Time 1 (i.e., day of child's evaluation) and administered again, by phone, during the follow-up interview. The 10-item ADHD Knowledge scale had good internal consistency with an alpha of .86 for the Time 1 administration, and an alpha of .75 for the second administration. See Appendix B for the ADHD Beliefs and Attitudes Scale.

In the present study, there was a wide range of scores for the 10-item ADHD knowledge Scale at Time 1. As seen in Table 2, scores ranging from 22 to 64 at the first administration and ranged from 40 to 70 for the follow-up administration Results of a paired samples t-test showed

that participant scores were significant higher at follow-up (M = 58.62, SD = 7.06) compared to the initial administration (M = 51.62, SD = 9.59), $t(33) = -3.67$, $p = .001$, $d = 0.8$

Parent Help-Seeking Questionnaire

The Parent Help-Seeking Questionnaire was developed for an unpublished dissertation (Murphy, 2015) based on a series of scripts created by Raviv et al. (2003) designed to assess parent attitudes toward help-seeking behaviors. This questionnaire asks parents to rate their willingness to seek help for their child among a variety of treatment modalities (i.e., child-focused psychotherapy, parent-focused psychotherapy) and support systems (i.e., family, friends, teachers), as well as informal help-seeking options including self-help books and internet resources).

The Parent Help-Seeking Questionnaire consists of 11 items, on which parents/caregivers are asked to rate their willingness to utilize each help-seeking option on a 7-point Likert-type scale, ranging from one (absolutely not) to seven (definitely). A total help-seeking score was calculated from participant responses by adding the ratings across each of the 11 items. In addition to the total score, two subscales were calculated to examine parent interest in formal versus informal services. The subscales were generated by summing items one through six (formal services) and summing items seven through 11 (informal services). An unpublished dissertation study (Murphy, 2015) found good internal consistency ($\alpha = .91$) for formal help-seeking items, with a lower internal consistency ($\alpha = .65$) for informal help-seeking items. For the present study, the total help seeking scale had good internal consistency with an alpha of .88. Both the formal and informal help seeking subscales also had good internal consistency with alphas of .84 and .82, respectively. As seen in Table 6, formal help-seeking scores ranged from 6.00 to 42.00 while informal help-seeking scores ranged from 7.00 to 35.00. See Appendix E for

the Parent Help-Seeking Questionnaire.

Written Analogue Questionnaire (WAQ)

The WAQ was originally developed for use in a study conducted by Johnston and Freeman (1997) comparing parent attributions for children with and without an externalizing disorder. The WAQ includes written scenarios describing inattentive, hyperactive/impulsive, oppositional, and prosocial behavior. It was adapted for use in the present study, such that the scenarios were revised to reflect more modern situations (e.g., listening to the weather forecast on the TV versus listening to the weather forecast on the radio). The present study included seven scenarios describing inattentive, hyperactive/impulsive, and oppositional behaviors (two scenarios for inattentive, three scenarios for hyperactive/impulsive behaviors, and two scenarios for oppositional behavior).

Parents/caregivers were asked to read each scenario and imagine that their own child is displaying the behavior described. Following each scenario, parents were asked to provide a rating for five Likert-scale items assessing a specific type of attribution. These items include the cause of the child's behavior (1 = something about the child, 10 = something about other people/the situation), the child's control over behavior (1 = completely within his or her control, 10 = not at all within his or her control), the globality of behavior (1 = happens in many situations, 10 = specific to this situation), the stability of behavior (1 = a one-time thing, 10 = will happen again in the future), and parent responsibility for behavior (1 = not at all responsible, 10 = very much responsible). The original WAQ demonstrated good internal consistency with alpha levels of .80 to .92 (Johnson et al., 2005). See Appendix C for adapted WAQ.

The present considered parent attribution ratings of stability and child control. Following the procedures used by Johnston and colleagues, means for, child control and stability were

averaged across the seven vignettes depicting inattentive, hyperactive, and oppositional behavior. In the present study, child control scale and stability scale demonstrated good internal consistency with alphas of .87 and .82, respectively.

Procedure

Caregivers were asked to participate in a survey on parent help-seeking via a flier (see Appendix A) that was sent out prior to the child's evaluation appointment (i.e., with a packet of questionnaires routinely sent out prior to the scheduled evaluation). Since evaluation appointments are often scheduled several weeks/months in advance, the recruitment flier informed caregivers that they could contact the clinic in advance of their child's evaluation to obtain copies of the study questionnaires if desired. Other options for participating in the study were to complete the questionnaires on the day of the child's evaluation or take the questionnaires home with them the day of the evaluation and return them via mail or on the day of the feedback session. Caregivers were advised that participation was voluntary and that a decision not to participate would not impact clinical services provided. Individuals who agreed to participate were given a packet that included the consent form and three questionnaires: ADHD Beliefs and Attitudes Scale, WAQ, and Parent Help Seeking Questionnaire. Participants were given the option of being entered into a drawing to win one of four $50 gift cards. Parents signed a consent allowing information to be used from the following measures administered as part of the child's ADHD evaluation: BASC-3 PRS, Developmental Questionnaire (demographic information), PSI-4, and diagnosis and recommendations.

Also included in the packet of questionnaires was a form that requests preferred contact information from the caregiver to be used for the follow-up phone call 8-10 weeks after the child's feedback session. Approximately 8-10 weeks after their feedback session, one of the

primary investigators, or a trained research assistant, called the caregiver to administer the ATIF. The interviewer had a copy of the recommendations from the child's evaluation which was used in the administration of the modified ATIF (i.e., when asking about extent of compliance with each recommendation). After completing the ATIF, the researcher re-administered the ADHD Knowledge Scale over the phone to each caregiver.

Data Analysis Plan

Correlational analyses were used to examine the relationship between parent attributions (controllability and stability) and accurate knowledge about ADHD, as well as the relationship between parent attributions and accurate knowledge about ADHD with adherence to assessment recommendations. Correlational analyses were also conducted to examine the relationship between parent interest in help-seeking and adherence to assessment recommendations. It was initially proposed that a hierarchical regression with five predictor variables would be used to predict parent compliance with assessment recommendations. Due to a smaller than anticipated sample size, regression analyses were conducted with only two of the five proposed variables (ADHD knowledge at Time 1 and perceived number of barriers). Attributions of child control and perceived number of barriers were chosen as predictors because they had the strongest association with average adherence to assessment recommendations.

RESULTS

Power Analysis

Prior to beginning the study, a power analysis was performed to determine the number of participants needed to provide sufficient power for analyses. Previous research examining parent attributions (i.e., Johnston et al., 2005) and a study predicting treatment adherence (i.e., Mucka et al. 2017) reported a medium effect size, thus a medium effect size was predicted in the present study. The initial power analysis, based on five independent variables (i.e., ADHD knowledge, caregiver attribution of stability, caregiver attribution of child controllability, self-reported parenting stress level, and perceived number of barriers) indicated that a sample of approximately 90 participants would be needed to obtain a medium effect size with a confidence level of alpha at .05. Delays in data collection due to COVID-19, as well as poor response among participants contacted for the follow-up phone interview resulted in a smaller sample size then necessary. A regression analysis with two independent variables, would ideally include at least 50 participants to detect a medium effective size. Since the present study included only 35 participants, the power was likely insufficient to support a null hypothesis.

Preliminary Analysis

Preliminary analyses were conducted to consider the integrity of the collected data. One participant was removed from analyses due to incomplete data on ADHD knowledge questionnaires at Time 1 (i.e. more than 20% of study questionnaire items left blank), and likely response bias (i.e., selected the same Likert-rating on every question) on the Help-Seeking questionnaire. Four participants had missing data equaling less than 20% of the questionnaire items, the missing data was replaced with means reflective of the other participant responses in that section. The distribution of data was examined to assess for multicollinearity, singularity,

normality, linearity, homoscedasticity, and potential data outliers. Skewness and kurtosis for the primary variables were within normal limits. As can be seen in Table 6, the highest correlation between variables was found between ADHD knowledge and total interest in help seeking (r = .50). This is an acceptable level of multicollinearity, as it does not exceed the value of .80 suggested by Grimm and Yarnold (1995). Table 2 presents means, standard deviations, and ranges for the primary research variables.

Table 2

Mean, Standard Deviation, and Range for Primary Research Variables

Variable	M	SD	Range
Perceived Child Control	7.37	1.60	3.57 – 9.86
Perceived Stability	7.10	1.77	2.29 – 10.00
Total Help Seeking	60.47	9.03	42.00 – 76.00
ADHD Knowledge Time 1	53.15	7.43	38.00 – 64.00
ADHD Knowledge Time 2	58.62	7.06	40.00 – 70.00
Average Adherence	3.33	.88	1.00 – 5.00
Average Importance	4.38	.59	3.00 – 5.00
Average Number of Barriers reported*	1.02	.63	.00 – 3.00

Note. *Mean barriers across the four primary barriers

Descriptive Statistics

Adherence

Participants received between 3 and 8 recommendations per evaluation (M = 6.03, SD = 1.29). Rates of adherence were measured using a Likert rating reflecting caregivers' reports of varying levels of adherences across the four primary recommendations. Caregivers were asked to rate adherence with each recommendation on a 1 to 5 Likert scale, where 1 = "*Not at all,"* 3 =

"Somewhat," and 5 = *"Completely."* Likert scores were then averaged to determine an adherence rate. For example, a caregiver who received all 4 recommendations and rated his/her adherence level on the 5-point Likert scale as a "2" for two recommendations, and a "4" for two recommendations, would be described as having a 60% adherence rate [(2+2+4+4)/4 = 3; 3/5 = .60]. Across the four primary recommendations, caregiver adherence rates ranged from 20% to 100% (*M* = 66.62, *SD* = 17.56). Table 3 presents mean adherence rates for each of the four primary recommendations.

Table 3

Adherence Rates for Four Primary Recommendations

Recommendation	Mean	SD	Min	Max
Read Information Provided	70.91%	19.42	20%	100%
Behavior Report Card	62.96%	34.95	20%	100%
Extracurricular Activity	64.38%	31.21	20%	100%
Medication	79.23%	32.73	20%	100%

Barriers to Adherence

The vast majority of participants (94.29%) endorsed encountering at least one barrier to adherence across the four primary recommendations. The most commonly reported barrier to adherence across recommendations was the COVID-19 pandemic. Lack of time was the most commonly reported barrier overall, in response to the specific recommendation (i.e., increase knowledge of ADHD, learning and implement behavioral parenting interventions). The least commonly reported barrier across recommendations was transportation. See Table 4 for the percentage of participants who reported each barrier to adherence for the four most primary recommendations. Similar to findings by Mucka et al. (2017) and Dreyer et al. (2010), the

average number of caregiver reported barriers was significantly correlated with adherence to assessment recommendations. See Table 6.

Table 4

Barriers to Adherence

Barrier	Recommendation			
	Information	Behavior Report Card	Extracurricular Activity	Medication
Didn't think it would help	9%	0%	3%	9%
Behavior no longer problem	3%	6%	0%	3%
Limited resources	6%	0%	11%	0%
Transportation	0%	0%	0%	0%
Insurance/Cost	6%	0%	11%	3%
Time	46%	11%	26%	0%
Forgot	3%	9%	3%	0%
Prefer to deal with behavior On own	6%	0%	0%	0%
COVID-19 Pandemic	26%	23%	37%	6%
Other*	17%	17 %	17%	11%

Note. During the follow up interview, caregivers were asked to list any barriers that impacted recommendation adherence. Because caregivers could identify more than one barrier, and since values were rounded, the total is greater than 100%.

**Other: custody issues, caregiver does not want to implement recommendation, and the caregiver does not want the child to feel singled out at school.*

Across all recommendations (i.e., not limited to four primary recommendations), caregivers reported one to five barriers (M = 3.11, SD = 1.08). The most commonly reported barriers across all recommendations were lack of time and other, which were reported at least one time by approximately 71% of participants. The least commonly reported barriers across all recommendations was transportation, which was reported by approximately 3% of participants.

Importance of Recommendations

Caregivers were asked to rate importance of each recommendation on a 1 to 5 Likert scale, where 1 = "Not important" 3 = "Somewhat important," and 5 = "Extremely important." Caregiver ratings of importance of recommendations ranged from 3 to 5 (M = 4.36, SD = .59). As seen in Table 5, caregivers tended to rate all four primary recommendations as high in importance (i.e., mean of 4.33 or higher on a 5-point scale).

Table 5

Importance of Recommendations to Caregivers

Recommendation	Range	Mean	SD
Read Information Provided	1-5	4.52	.80
Behavior Report Card	1-5	4.33	.83
Extracurricular Activity	1-5	4.47	.84
Medication	1-5	4.37	1.11

Correlational Analyses

To test hypothesis 1, Pearson product-moment correlational analyses were used to assess the relationships between child-causal attributions, as measured by the WAQ, and adherence to assessment recommendations. Contrary to predictions, parent attributions of child control were not significantly correlated with adherence to assessment recommendations (p = .31; see Table 6).

Correlational analyses were also used to explore the next two hypotheses, examining the relationship between accurate knowledge about ADHD and parent attributions of stability, as well as association of attributions with adherence to assessment recommendations *(Hypotheses 2 and 3)*. Contrary to predictions, caregiver knowledge about ADHD was not significantly correlated with attributions of stability ($p = .57$) or caregiver adherence to assessment recommendations ($p = .92$). Caregiver attributions of stability also were not significantly correlated ($p = .98$) with adherence to assessment recommendation (see Table 6).

ADHD knowledge was re-assessed during the follow up interview. Correlational analyses indicated that ADHD knowledge during the follow-up interview was positively correlated with caregiver adherence to assessment recommendations ($r = .37$, $p = .03$). This finding likely reflects the likelihood that parents who read information provided at feedback (one of the four primary recommendations) increased their knowledge of ADHD. Due to the confound between assessment recommendation and ADHD knowledge (i.e., one of the assessment recommendations was for caregiver to increase knowledge about ADHD), a correlational analysis was conducted examining the relationship between ADHD knowledge at Time 2 and mean adherence for the other three primary recommendation (i.e., school-behavior report card, etc.). The correlation between ADHD knowledge and average adherence for the other three recommendations was not significant ($r = .23$, $p = .21$), suggesting that the significant correlation between ADHD knowledge at follow-up and adherence to assessment recommendations was based primarily on the recommendation to read the provided information.

For the fourth hypothesis, correlational analyses were used to examine the association between caregiver interest in help-seeking (at Time 1), and adherence to assessment recommendations at Time 2. A total/combined, help-seeking score was calculated by summing

ratings on the formal and informal scales (see Table 2). Contrary to predictions, total interest in help-seeking was not significantly correlated with adherence to assessment recommendations (see Table 6). Similarly, neither interest in formal help seeking nor information help seeking were significantly associated with adherence to recommendations.

Table 6

Correlations Between Primary Research Variables

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Child Control	1										
2. Stability	-.06	1									
3. For. Help Seek.	.11	.04	1								
4. Infor. Help Seek.	.07	.23	.64**	1							
5. Total Help Seek.	-.02	.04	.84**	.85**	1						
6. ADHD Know.	.03	.10	.37*	.48**	.50**	1					
7. ADHD Know. 2	.02	.21	.32	.46*	.46**	.14	1				
8. Adherence	.18	-.01	.08	.00	.09	.02	.37*	1			
9. Importance	.07	.21	-.07	.04	.15	-.03	.34*	.40*	1		
10. Barriers	-.14	.01	-.10	-.13	-.24	-.17	-.38*	-.44**	-.08	1	
11. Income	.06	.19	.31	.40*	.37*	.38*	.25	-.17	.17	.10	1

Note. For. Help Seek = Interest in Formal Help Seeking, Infor. Help Seek = Interest in Informal Help Seeking, Total Help Seek = Total interest in help seeking, ADHD Know. = ADHD knowledge at Time 1, ADHD Know. 2 = ADHD knowledge at Time 2.

* $p < .05$, ** $p < .01$

As seen in Table 6, in addition to barriers and Time 2 ADHD knowledge, importance of recommendations was significantly correlated with adherence. Since previous research (i.e., Mucka et al., 2017) suggested exploring the relationship between SES and treatment adherence, the relationship between family income and adherence was considered. Although income was not found to be significant correlated with adherence, income was significantly associated with caregiver interest in informal help seeking and total interest in help seeking, such that the higher the family income, the higher the score of caregiver interest in help seeking. There were no significant associations between family income and attributions, knowledge, adherence, or barriers (see Table 6).

ADHD knowledge (Time 1 and Time 2) was found to be significantly correlated with interest in help seeking (formal, informal, and total). This suggests that parents with greater knowledge of ADHD reported more interest in help seeking whereas parents with less knowledge of ADHD reported less interest in help-seeking at Time 1. Additionally, results indicate a significant positive association between ADHD knowledge at Time 2 and average importance across the four primary recommendations. This indicates that the greater amount of knowledge about ADHD at Time 2, the higher level of importance caregivers rated recommendations. The present study also found a significant, negative association between ADHD knowledge at Time 2 and barriers, such that the higher the level of ADHD knowledge at Time 2, the lower the number of barriers reported. Lastly, correlational analyses revealed a significant, positive association between adherence to assessment recommendations with caregiver-rated importance of recommendations.

Multiple Regression Analysis

Finally, a hierarchical regression was conducted to explore the fifth hypothesis, exploring the extent to which caregiver attributions (cognitive representations) and accurate knowledge about ADHD predict adherence to assessment recommendations. As mentioned, due to a smaller than anticipated sample size, the regression was conducted with only two variables (ADHD knowledge at Time 1 and perceived number of barriers) rather than five predictors. Caregiver knowledge about ADHD at Time 1 and perceived number of barriers were chosen as predictors because they had the strongest association with average adherence to assessment recommendations.

Variables were entered in two steps to determine if knowledge of ADHD predicted adherence after accounting for perceived barriers. Average perceived barriers was entered in the first step of the regression, followed by caregiver knowledge about ADHD at Time 1 in the second step. The initial model, including only perceived barriers as a predictor, was significant, F (1,33) = 7.52, p = .01, and average perceived barriers explained 19% of variation in adherence to recommendations. The second model, which included caregiver knowledge about ADHD at Time 1, was also significant, F (2, 33) = 3.72, p = .04. However, adding caregiver knowledge about ADHD at Time 1 only slightly increased the variance to 19.4%, and the overall change in R^2 was not significant. In contrast with the hypothesis, caregiver knowledge about ADHD at Time 1 did not significantly predict adherence to assessment recommendations after accounting for perceived barriers. See Table 7.

Table 7

Hierarchical Regression Analysis for Variables Predicting Adherence

Variables Entered	R^2	ΔR^2	β	F	*df*
Step 1	.19			7.52	1,33
Barriers			-.44**		
Step 2	.19	.003		3.72	2,33
Barriers			-.44**		
ADHD Knowledge			-.06		

** $p < .01$

DISCUSSION

The current study was based on the Common Sense Model (CSM) and examined caregiver adherence to assessment recommendations. Specifically, this study explored the extent to which perceived barriers, caregiver attributions of child behavior, and knowledge of ADHD, are associated with caregiver adherence to assessment recommendations. This study also explored the association between caregiver interest in help seeking and adherence to assessment recommendations. Consistent with previous research, perceived barriers was found to predict adherence to assessment recommendations. Knowledge of ADHD at the time of the follow-up interview was also a significant predictor of adherence, however this finding was due primarily to the relationship between knowledge of ADHD and the recommendation to read information provided at the feedback session. When considering recommendations that did not involve reading information about ADHD, there was not a significant association between ADHD knowledge and adherence to assessment recommendations

Perceived Barriers and Adherence

Based on previous research (Dreyer et al., 2010; Mucka et al., 2017), it was hypothesized that number of perceived barriers would be associated with adherence to assessment recommendations. In line with previous research, results of the present study found a significant negative relationship between perceived barriers and adherence to assessment recommendations.

Two previous studies exploring adherence to assessment recommendations indicate an adherence rate of approximately 70% for recommendations provided (Dreyer et al., 2010; Mucka et al., 2017). In line with these studies, adherence rates in the present study ranged from 62.96% to 79.23%, dependent on the recommendation. Similar to results found in the Dreyer et al. (2010) study, school-based recommendations had the lowest level of adherence (approximately 60%),

while recommendations regarding active self-help (e.g., reading materials provided) and medication had the highest adherence rates (ranging from 70% to 79%). It should be noted that the majority of referrals for child evaluations were from a medical provider. Thus it is quite likely that many of the participants had already consulted with a medical provider about medication for their child's ADHD symptoms, helping to explain the high adherence rates for medication. The high level of adherence for increasing knowledge of ADHD may be due in part to the feedback procedures utilized in the ADHD evaluation clinic. Information regarding ADHD is commonly discussed with caregivers during the feedback appointment and parents often glance through the handouts provided during feedback. Thus it is possible that the high rate of compliance for the recommendation to read materials provided was associated with the feedback session as well as perhaps incentive from the feedback session to further review the handouts provided.

Also in line with findings by Dreyer et al. (2010), the vast majority of caregivers in the present study (94%) reported encountering at least one barrier to adherence. Previous studies indicate caregivers endorsed an average or 2.6 (Dreyer et al., 2010) and 4.8 (Mucka et al., 2017) barriers to assessment recommendations. The mean number of obstacles reported in the present study, across all recommendations was 3.11, which is very similar to what was reported by Dreyer et al. and Mucka et al.

Similar to both Dreyer et al. (2010) and Mucka et al. (2010), lack of time was the most commonly reported barrier to adherence across all recommendations in the present study. Lack of time was the most commonly reported barrier reported in response to the recommendations focused on reading/increasing knowledge about ADHD and behavioral parenting interventions. Considering barriers commonly reported across all four of the primary recommendations, the

COVID-19 pandemic was reported most often. As might be expected, 36% of parents reported that the COVID-19 pandemic was a barrier to getting their child involved in extra-curricular activities. However only 6% of parents reported that COVID-19 was a barrier to consulting with a physician about medication. In addition, only 23% of caregivers reported that COVID-19 was a barrier in implementing a recommendation to talk with their child's teacher to implement a school behavior report card. A likely explanation for these results is the long period of time in which data was collected, ranging from just before the onset of the COVID-19 pandemic, to two years following the start of the pandemic. The influence of COVID-19 was likely much more of a barrier for participants contacted between the spring of 2020 and spring of 2021, as compared to caregivers who did the follow-up interview from fall of 2021 through spring of 2022.

Attributions of Child Control and Adherence

Previous research on the help seeking process has found a variable relationship between attributions of child control and treatment adherence. Specifically, Johnston et al. (2001) found caregiver attributions of greater child control was associated with greater acceptance of a behavior parent training intervention. In contrast to this finding, Alonso and Little (2019) found that caregivers who sought help for their child's behavior held increased external, un-intentional, and global attributions, compared to caregivers who had not sought services. Based on this research, it was predicted that both stable attributions as well as caregiver attributions that their child has less control over their behavior, would be associated with greater adherence to assessment recommendations. However, results of the present study did not find any significant relationship between caregiver attributions of child control or stability and adherence to assessment recommendations. In addition, the direction of the correlation between child control and adherence to recommendations was in the opposite direction as anticipated (i.e., perceptions

of greater child control associated with greater adherence to recommendations).

Although previous research has found a relationship between parent attributions of child control and engagement in treatment (e.g., Chacko et al., 2017), other research has not found parent attributions to predict interest in child treatment. Kil et al. (2020) examined the associated between child-responsible attributions and caregiver readiness for treatment. Similar to the present study, Kil et al. (2020) did not find a significant association between child-causal attributions and caregiver readiness for treatment.

One potential explanation for the variable findings regarding child-responsible attributions is that parent-causal rather than child-responsible attributions may have a stronger association with treatment adherence and engagement (Peters et al., 2005). Parent-causal attributions are defined as a caregiver's belief that his/her parenting behavior contributes to his/her child's behavioral difficulties. A study conducted by Pereira and Barros (2018) found that caregivers of children with externalizing behavior difficulties, who endorsed increased parent-causal attributions, were more likely to attend and complete behavioral therapy, as compared to caregivers with lower parent-causal attributions. Kil et al. (2020) also found that caregivers who held increased parent-causal attributions reported greater readiness for treatment. Thus it may be that parent attributions about their own behavior (i.e., influence of parenting on child behavior) is more likely to predict adherence to assessment recommendations than attributions about child behavior.

The small sample size is the most likely explanation for the lack of findings in regard to child control attributions predicting adherence to recommendations. As noted the direction of the correlation was in the opposite direction as predicted. In other words, the positive correlation suggested that parent attributions of greater child control was associated with greater treatment

adherence. Johnston et al (2010) found that parent pre-treatment attributions of higher child control to be associated with greater acceptance of behavior parent training. Thus the association between parent attributions of child control over behavior and interest as well as adherence to recommendations for intervention may depend on other factors, such as the interaction of parent causal and child control attributions. The vignettes used in the Written Analogue Questionnaire (WAQ) could also help to explain the inverse relationship between child control attributions and recommendation adherence. Several of the vignettes included very specific situations in which the child behavior may have been perceived as intentional or deliberate (e.g., "Your child enters the kitchen just as you have finished sweeping the floor and getting dust in a pile to pick up. The child doesn't wait for you to finish and heads straight to the fridge. As he rushes through the kitchen, the pile of dirt scatters across the floor."). The WAQ is designed to assess parent attributions in response to a specific situation (vignette) which may not reflect their attributions for child behavior more broadly. Thus, higher ratings of child control may reflect parent responses to the specific situations depicted in the vignettes and may not generalize to parent attributions more broadly.

ADHD Knowledge and Adherence

Prior research has yielded inconsistent findings regarding the association between caregiver knowledge of ADHD and seeking treatment for a child. An initial study in 1999 by Corkum et al. suggested that while ADHD knowledge is important to initial treatment enrollment, there may be additional factors that impact caregiver engagement in treatment. Several years later, Johnson et al. (2005) found that parent beliefs about ADHD were significantly associated with ratings of acceptability for treatments their children were receiving. The present study did not find a significant relationship between caregiver knowledge about

ADHD and adherence to assessment recommendations. However, a significant relationship was found between ADHD knowledge at Time 2 and adherence to assessment recommendations. As previously stated, this finding was likely due primarily to the relationship between knowledge of ADHD and the recommendation to read information provided at the feedback session. When considering recommendations that did not involve reading information about ADHD, there was not a significant association between ADHD knowledge and adherence to assessment recommendations.

There was a significant increase in caregiver knowledge about ADHD at Time 2, as compared to Time 1. There are several possible explanations for this finding. First, getting information about their child's ADHD diagnosis during the feedback session may have prompted parents to increase their understanding about ADHD and/or behavioral parenting interventions, prompting them to read the information provided and/or seek out other information. It is also possible that parent knowledge of ADHD increased as a result of psychoeducation provided during the feedback session, thus resulting in higher scores on the ADHD knowledge scale regardless of whether or not parents read the materials provided. It is also possible that higher scores at Time 2 was due to more errors in responding when parents completed the measures at Time 1. At Time 1, parents were asked to complete the ADHD Knowledge scale (all 32 items) after they had already completed 5 questionnaires for the child's ADHD evaluation. Thus is it possible that caregivers may have responded to items on the questionnaire quickly resulting in more incorrect responses. At Time 2, the items on the ADHD knowledge scales were read to the parents over the phone, perhaps allowing for a more thoughtful and accurate response. As noted, knowledge of ADHD at Time 1 and Time 2 was significantly associated with interest in all types of help seeking. In addition, knowledge of ADHD at Time 2 was significantly associated with

ratings of importance for specific recommendations. These findings provide support for the benefit of providing education about ADHD to caregivers following child diagnosis. A recent review examining a psychoeducation intervention for caregivers and teachers indicated that one of the primary purposes of psychoeducation is to increase youth and families' sense of control over the disorder through increasing feelings of competence (Dahl et al., 2020). For the purposes of the review, psychoeducation is defined as one to two sessions in which healthcare professionals provide information about ADHD, its causes and impact, parenting interventions, and support. Of note, available clinical guidelines in Canada and Europe suggest that psychoeducation should be the first line of treatment for ADHD. Regarding adherence, Bai et al. (2015) conducted a study to examine the impact of a brief psychoeducation interview on medication adherence. Bai et al. (2015) identified a significant increase in medication adherence after 1- and 3-month intervals in the group who received the psychoeducation intervention, as compared to the control group. Thus, research indicates that psychoeducation forms the basis of youth's treatment plan.

Attributions of Stability and ADHD Knowledge

Knowledge of ADHD was predicted to be associated with attribution of stability. This was based on the current conceptualization of ADHD as a chronic neurodevelopmental disorder with symptom onset in childhood. Specifically, a study by Hong et al. (2013) found that approximately 65% of children with ADHD continue to struggle with impairment into adulthood. Results of the present study did not find a significant relationship between accurate knowledge about ADHD and caregiver attributions of stability, likely due to the small sample size. The correlations between attributions of stability and ADHD knowledge (Time 1 and Time 2) were in the anticipated direction and may have been significant with a larger sample size.

Interest in Help Seeking and Adherence

To this author's knowledge, research has not examined the direct relationship between caregiver interest in help seeking and adherence to assessment recommendations. Prior research by Johnston and Burke (2020) indicated that problem recognition, the first step of the help-seeking process, is one of the strongest predictors of use of mental health services. Based on this finding, it was predicted that caregiver interest in help-seeking would be positively associated with adherence to assessment recommendations. In contrast with this hypothesis, the present study did not find a significant relationship between caregiver interest in help seeking and adherence to assessment recommendations.

A possible explanation for these results involves the difference between interest in help seeking and actual help seeking behavior. Prochaska and colleagues propose that improving treatment outcomes, including treatment compliance, hinges on understanding the stage of the client's readiness to change. The readiness to change model considers personal, family, environmental, and social factors. The original readiness to change model included five stages: precontemplation, contemplation, planning, action, and maintenance (Prochaska & DiClemente 1992). Brestan et al. (1999) applied the stages of change model to parenting and condensed the model to include three dimensions of readiness: *precontemplation* in which caregivers feel little need to change parenting, *contemplation* in which caregivers start to think about changing parenting, and *action* in which caregivers have already started to change their parenting (Brestan et al., 1999).

More recent research conducted by Proctor et al. (2018) found that parent readiness for change successfully predicted caregiver attendance at a parenting intervention. Applying the stage of change model to the present study, it could be argued that taking a child to an

appointment for a psychological evaluation is indicative of the "action" stage of change. However, seeking an evaluation and possible diagnosis for a child could also be seen as part of the preparation stage (i.e., seeking information to prepare for change). Overall, the readiness for change model is dynamic, such that caregivers can move fluidly across the stages of change at various points in their child' treatment. Thus, the path from preparation to action (i.e., following through on assessment recommendations) is likely to vary from one caregiver to another.

ADHD Knowledge as a Predictor of Adherence

Prior research examining adherence through the CSM found support that knowledge about an illness/disorder (coherence), is a significant predictor of treatment adherence. To our knowledge, this is the first study to consider caregiver knowledge of a specific disorder (ADHD) in predicting adherence to assessment recommendations. Rather, previous research has focused on perceived barriers in predicting adherence. Consistent with hypotheses, the present study found that ADHD knowledge does not successfully contribute to the prediction of adherence to assessment recommendations.

It should be noted, however, that knowledge of ADHD accounted for less than 20% of the variance in treatment adherence, thus suggesting that other factors, not considered in the present study, may have greater influence on adherence. It light of this, more research with a larger sample size is needed to determine additional variables that may predict adherence to assessment recommendations. Utilizing the stages of change model and recent research examining the importance of psychoeducation as a first line treatment for ADHD, future research may examine the impact of psychoeducation on increasing a caregivers' readiness for change, thus impacting overall adherence to assessment recommendations.

Limitations

One key limitation of the present study is the small sample size. The present study collected data via a follow-up phone interview several months after caregivers attended a feedback session regarding their child's assessment. Unfortunately, more than 50% of caregivers who participated in the initial phase of the study were lost to follow up. As mentioned, parents who participated in the follow-up phase were more likely to have children diagnosed with fewer comorbid disorders. Perhaps caregivers of children with fewer comorbid disorders, as compared to children with multiple diagnoses, found more benefit in education and interventions targeting ADHD and thus were more motivated to participate in the follow-up phase as a means of gaining more information or support for their child. It is also possible that parents of children with more than one diagnosis were under greater stress, contributing to less likelihood of responding to messages about the follow-up study. The low percentage of parents who participated in the follow-up phase is problematic for several reasons. In addition to reducing sample size, caregivers who participated may not be representative of the overall population evaluated in the ADHD clinic. It is likely that caregivers who participated in the present study represent a "subgroup" of the caregivers who tend to be more compliant, thus contributing to the high percent of compliance with assessment recommendation. Results of the present study may not generalize to a broader group of parents/caregiver of children formally evaluated and diagnosed with ADHD.

Another limitation of the present study is the attribution measure used vignettes. One difficulty with measuring attributions using situation-specific vignettes is that caregivers may not have personal experience related to the specific situation or behavior described. Thus, it may be difficult for caregivers to imagine their child in the vignette and adequately report attributions for

their child's behavior. Additionally, the wording of the vignettes may have been confusing to caregivers. While the purpose of the vignettes was to measure the extent to which caregivers attributed the cause of their child's behavior as something they have control over, caregivers may have interpreted the wording as whether the behavior is something their child is capable of doing. Therefore, it is likely that the attribution measure and wording of the child control attribution may have not accurately measured what it intended to.

Another factor that may have impacted results is that the measure used in the present study relied upon caregiver self-report of interest in help-seeking, adherence rate, and barriers. Of note, interest in help-seeking is a separate construct than actual help seeking, and this study identified that interest in help-seeking was not significantly associated with actual adherence to recommendations. Additionally, because the present study measured adherence to recommendations via a caregiver self-report Likert rating, caregivers were likely influenced by social desirability to report favorable outcomes. Specifically, caregivers in the present study may have been biased toward providing higher ratings of compliance to avoid possible judgment from the researcher conducting the follow up interview. Finally, while the present study accounted for the occurrence of barriers, it did not allow for caregivers to rate the impact of each barrier. Accounting for the impact of barriers may have both research and clinical utility. From a research perspective, the quality or intensity of perceived barriers may contribute to predicting adherence to recommendations. While clinically, accounting for the quality/intensity of barriers may be used to shape psychoeducation to support adherence to recommendations.

Future Directions

Results of the present study highlight gaps in the current literature and important directions for future research. Future research may benefit from measuring the impact of barriers

on a Likert-type scale to better predict adherence to recommendations. Additionally, due to the discrepancy between caregiver interest in help-seeking and adherence to interventions, it may be beneficial for future research to examine caregiver motivation to change during the feedback session, and the relationship between caregiver attributions, motivation to/readiness for change, and adherence to assessment recommendations.

Clinical Implications

Results of the present study highlight the importance of perceived barriers on adherence to assessment recommendations. In the ADHD evaluation clinic where data was collected, the evaluator meets with caregivers to review results and provide information and resources during the feedback session. During this conversation, it may be helpful to assess perceived barriers with caregivers and collaborate to problem-solve barriers and provide additional resources.

Current results also suggest that caregiver knowledge about ADHD may increase adherence to recommendations, perhaps by helping parents to better understand the rationale and importance of specific recommendations. For example, previous research has found that parents with knowledge about the biological etiology of ADHD report greater acceptance of medication intervention (Brinkman et al., 2009). Given that medication is a first line evidence-based intervention for ADHD (Prinstein et al., 2019) that is also somewhat controversial (Bussing et al., 2012; Pham et al. 2010), reviewing the pros and cons of medication during feedback may support caregiver adherence to recommendations. Likewise, providing brief psychoeducation regarding behavioral interventions for ADHD during the feedback session could increase the likelihood of parents following through with parenting-focused interventions. Although further research is needed to better understand the range of factors that influence parent adherence to assessment recommendations, results of the present study suggest that increasing knowledge of

ADHD is one factor that could improve outcomes for children diagnosed with ADHD. This is particularly important given the chronicity of ADHD, and the importance of early, evidence-based interventions to improve outcomes.

References

Abidin, R. (1990). *Parenting Stress Index Short Form Test Manual*. Pediatric Psychology Press.

Al Anbar, N. N., Dardennes, R. M., Prado-Netto, A., Kaye, K., & Contejean, Y. (2010). Treatment choices in autism spectrum disorder: The role of parental illness perceptions. *Research in Developmental Disabilities, 31*(3), 817–828. https://doi.org/10.1016/j.ridd.2010.02.007

Alonso, J., & Little, E. (2019). Parent help-seeking behaviour: Examining the impact of parent beliefs on professional help-seeking for child emotional and behavioural difficulties. *The Educational and Developmental Psychologist*, *36*(2), 60–67. https://doi.org/10.1017/edp.2019.8

American Psychiatric Association, & American Psychiatric Association (Eds.). (2013). *Diagnostic and statistical manual of mental disorders: DSM-5* (5th ed). American Psychiatric Association.

Bai G., Wang Y., Yang L., & Niu W. (2015). Effectiveness of a focused, brief psychoeducation program for parents of ADHD children: Improvement of medication adherence and symptoms. *Neuropsychiatric Disease and Treatment, 11,* 2721-2735. https://doi.org/10.2147/NDT.S88625. PMID: 26604761; PMCID: PMC4655671.

Barroso, N. E., Hungerford, G. M., Garcia, D., Graziano, P. A., & Bagner, D. M. (2016). Psychometric properties of the Parenting Stress Index-Short Form (PSI-SF) in a high-risk sample of mothers and their infants. *Psychological Assessment, 28*(10), 1331–1335. https://doi.org/10.1037/pas0000257

Bennett, D. S., Power, T. J., Rostain, A. L., & Carr, D. E. (1996). Parent Acceptability and Feasibility of ADHD Interventions: Assessment, Correlates, and Predictive Validity. *Journal of Pediatric Psychology*, *21*(5), 643–657. https://doi.org/10.1093/jpepsy/21.5.643

Brestan., E., Ondersma, S., Simpson, S., & Gurwitch, R. (1999). *Application of stage of change theory to parenting behavior: Validating the parent readiness to change scale.* Paper presented at the Florida Conference on Child Health Psychology, Gainesville, FL.

Brinkman, W. B., Sherman, S. N., Zmitrovich, A. R., Visscher, M. O., Crosby, L. E., Phelan, K. J., & Donovan, E. F. (2009). Parental Angst Making and Revisiting Decisions About Treatment of Attention-Deficit/Hyperactivity Disorder. *PEDIATRICS*, *124*(2), 580–589. https://doi.org/10.1542/peds.2008-2569

Bussing, R., Koro-Ljungberg, M., Noguchi, K., Mason, D., Mayerson, G., & Garvan, C. W. (2012). Willingness to use ADHD treatments: A mixed methods study of perceptions by adolescents, parents, health professionals and teachers. *Social Science & Medicine, 74*(1), 92–100. https://doi.org/10.1016/j.socscimed.2011.10.009

Bussing, R., Zima, B. T., Gary, F. A., Garvan, C. W. (2003). Barriers to detection, help-seeking, and service use for children with ADHD symptoms. *The Journal of Behavioral Health Services & Research* 30, 176–189. https://doi.org/10.1007/BF02289806

Caci, H., Doepfner, M., Asherson, P., Donfrancesco, R., Faraone, S. V., Hervas, A., & Fitzgerald, M. (2014). Daily life impairments associated with self-reported childhood/adolescent attention-deficit/hyperactivity disorder and experiences of diagnosis and treatment: Results from the European Lifetime Impairment Survey. *European Psychiatry, 29*(5), 316–323. https://doi.org/10.1016/j.eurpsy.2013.10.007

Chacko, A., Wymbs, B., Rajwan, E., Wymbs, F., & Feirsen, N. (2017). Characteristics of parents of children with ADHD who never attend, drop out, and complete behavioral parent training. *Journal of Child and Family Studies*, *26*(3), 1-11. https://doi.org/10.1007/s10826-016-0618-z.

Chen, M., Seipp, C. M., & Johnston, C. (2008). Mothers' and fathers' attributions and beliefs in families of girls and boys with attention-deficit/hyperactivity disorder. *Child Psychiatry and Human Development, 39*(1), 85–99. https://doi.org/10.1007/s10578-007-0073-6

Coker, T., Elliot, M., Toomey, S., Schwebel, D., Cuccaro, P., Emery, S., Davies, S., Visser, S., Schuster, M. (2016). Racial and ethnic disparities in ADHD diagnosis and treatment. *Pediatrics, 138*(3), e20160407. https://doi.org/10.1542/peds.2016-0407

Corkum, P., Rimer, P., & Schachar, R. (1999). Parental knowledge of Attention-Deficit Hyperactivity Disorder and opinions of treatment options: Impact on enrollment and adherence to a 12-month treatment trial. *The Canadian Journal of Psychiatry*, *44*(10), 1043–1048. https://doi.org/10.1177/070674379904401011

Dahl, V., Ramakrishnan, A., Spears, A., Jorge, A., Lu, J., Bigio, N., & Chacko, A. (2020). Psychoeducation interventions for parents and teachers of children and adolescents with ADHD: A systematic review of the literature. *Journal of Developmental and Physical Disabilities, 32,* 257–292. https://doi.org/10.1007/s10882-019-09691-3

Dempster, R., Wildman, B., & Keating, A. (2013). The Role of Stigma in Parental Help-Seeking for Child Behavior Problems. *Journal of Clinical Child & Adolescent Psychology*, *42*(1), 56–67. https://doi.org/10.1080/15374416.2012.700504

Dreyer, A. S., O'Laughlin, L., Moore, J., & Milam, Z. (2010). Parental adherence to clinical recommendations in an ADHD evaluation clinic. *Journal of Clinical Psychology, 66*(10), 1101–1120. https://doi.org/10.1002/jclp.20718

Gerdes, A. C., & Hoza, B. (2006). Maternal attributions, affect, and parenting in attention deficit hyperactivity disorder and comparison families. *Journal of Clinical Child & Adolescent Psychology, 35*(3), 346–355. https://doi.org/10.1207/s15374424jccp3503_1

Hagger, M. S., & Orbell, S. (2003). A meta-analytic review of the common-sense model of illness representations. *Psychology & Health, 18*(2), 141–184. https://doi.org/10.1080/088704403100081321

Hong, J., Novick, D., Treuer, T., Montgomery, W., Haynes, V. S., Wu, S., & Haro, J. M. (2013). Predictors and consequences of adherence to the treatment of pediatric patients with attention-deficit/hyperactivity disorder in Central Europe and East Asia. *Patient Preference and Adherence, 987*. https://doi.org/10.2147/PPA.S50628

Jiang, Y., Gurm, M., & Johnston, C. (2014). Child impairment and parenting self-efficacy in relation to mothers' views of ADHD treatments. *Journal of Attention Disorders, 18*(6), 532–541. https://doi.org/10.1177/1087054712443412

Johnston, C., Hommersen, P., & Seipp, C. (2008). Acceptability of behavioral and pharmacological treatments for attention-deficit/hyperactivity disorder: Relations to child and parent characteristics. *Behavior Therapy*, *39*(1), 22–32. https://doi.org/10.1016/j.beth.2007.04.002

Johnston, C., Seipp, C., Hommersen, P., Hoza, B., & Fine, S. (2005). Treatment choices and experiences in attention deficit and hyperactivity disorder: Relations to parents' beliefs and attributions. *Child Care, Health and Development, 31*(6), 669–677. https://doi.org/10.1111/j.1365-2214.2005.00555.x

Johnston, C., & Freeman, W. (1997). Attributions for child behavior in parents of children without behavior disorders and children with attention deficit-hyperactivity disorder. *Journal of Consulting and Clinical Psychology*, *65*(4), 636–645. https://doi.org/10.1037/0022-006X.65.4.636

Johnston, C., & Leung, D. W. (2001). Effects of medication, behavioral, and combined treatments on parents' and children's attributions for the behavior of children with attention-deficit hyperactivity disorder. *Journal of Consulting and Clinical Psychology, 69*(1), 67–76. https://doi.org/10.1037/0022-006X.69.1.67

Johnston, C., Mah, J. W. T., & Regambal, M. J. (2010). Parenting cognitions and treatment beliefs as predictors of experience using behavioral parenting strategies in families of children with Attention-Deficit/Hyperactivity Disorder. *Behavior Therapy, 41*(4), 491-504. https://doi.org/10.1016/j.beth.2010.02.001

Johnston, O, & Burke, J. (2020). Parental Problem Recognition and Help-Seeking for Disruptive Behavior Disorders. *The Journal of Behavioral Health Services & Research*, *47*(1), 146–163. https://doi.org/10.1007/s11414-018-09648-y

Kandel, R. (2006). Predicting adherence to treatment recommendations for children with ADHD. ProQuest Dissertations Publishing.

Kil, H., Martini, J., & Andrade, B. (2020). Parental attributions, parenting skills, and readiness for treatment in parents of children with disruptive behavior. *Journal of Psychopathology and Behavioral Assessment*, *42*(5). https://doi.org/10.1007/s10862-020-09801-y.

Lau, R. R., Bernard, T. M., & Hartman, K. A. (1989). Further explorations of common-sense representations of common illnesses. *Health Psychology, 8*(2), 195–219. https://doi.org/10.1037/0278-6133.8.2.195

Lin, Y.-F., & Chung, H.-H. (2002). Parenting stress and parents' willingness to accept treatment in relation to behavioral problems of children with attention-deficit hyperactive disorder: *Journal of Nursing Research, 10*(1), 43–56. https://doi.org/10.1097/01.JNR.0000347582.54962.04

MacNaughton, K. L., & Rodrigue, J. R. (2001). Predicting adherence to recommendations by parents of clinic-referred children. *Journal of Consulting and Clinical Psychology, 69*(2), 262–270. https://doi.org/10.1037/0022-006X.69.2.262

Miller, G. E., & Prinz, R. J. (2003). Engagement of families in treatment for childhood conduct problems. *Behavior Therapy, 34*(4), 517–534. https://doi.org/10.1016/S0005-7894(03)80033-3

Moore, T. R., & Symons, F. J. (2009). Adherence to behavioral and medical treatment recommendations by parents of children with autism spectrum disorders. *Journal of Autism and Developmental Disorders, 39*(8), 1173–1184. https://doi.org/10.1007/s10803-009-0729-0

Moss-Morris, R., Weinman, J., Petrie, K., Horne, R., Cameron, L., & Buick, D. (2002). The Revised Illness Perception Questionnaire (IPQ-R). *Psychology & Health*, *17*(1), 1–16. https://doi.org/10.1080/08870440290001494

Mucka, L. E., Hinrichs, J., Upton, F., Hetterscheidt, L., Kuentzel, J., Bartoi, M., & Barnett, D. (2017). Barriers to adherence to child assessment recommendations. *Journal of Child and Family Studies, 26*(4), 1029–1039. https://doi.org/10.1007/s10826-016-0621-4

Murphy, S. (2015). *Factors Influencing Parent Help-Seeking* [Unpublished doctoral dissertation]. Indiana State University.

Pereira, A. I., & Barros, L. (2018). Parental cognitions and motivation to engage in psychological interventions: A systematic review. *Child Psychiatry & Human Development, 50,* 1-15. https://doi.org/10.1007/s10578-018-0852-2

Peters, S., Rachel C., & Richard H. (2005). Maternal attributions and expressed emotion as predictors of attendance at parent management training. *Journal of Child Psychology and Psychiatry, 46*(4), 436-448. https://doi.org/10.1111/j.1469-7610.2004.00365.x

Pham, A. V., Carlson, J. S., & Kosciulek, J. F. (2010). Ethnic Differences in Parental Beliefs of Attention-Deficit/Hyperactivity Disorder and Treatment. *Journal of Attention Disorders*, *13*(6), 584–591. https://doi.org/10.1177/1087054709332391

Prinstein, M. J., Youngstrom, E. A., Mash, E. J., & Barkley, R. A. (Eds.). (2019). *Treatment of disorders in childhood and adolescence* (Fourth edition). The Guilford Press.

Prochaska, J., DiClemente, C., & Norcross, J. (1992). In Search of the Structure of Change. In: Klar, Y., Fisher, J.D., Chinsky, J.M., Nadler, A. (eds) Self Change. Springer, New York, NY. https://doi.org/10.1007/978-1-4612-2922-3_5

Proctor, K., Brestan-Knight, E., Fan, J., & Zlomke, K. (2018). Assessing parental readiness to change: A psychometric evaluation of the READI-SF in a Community Sample. *Journal of Child and Family Studies, 27*(1). https://doi.org/10.1007/s10826-017-0952-9.

Raviv, A., Raviv, A., Propper, A., & Fink, A. S. (2003). Mothers' attitudes toward seeking help for their children from school and private psychologists. *Professional Psychology: Research and Practice*, *34*(1), 95–101. https://doi.org/10.1037/0735-7028.34.1.95

Reimers, T. M., Wacker, D. P., Derby, K. M., & Cooper, L. J. (1995). Relation between parental attributions and the acceptability of behavioral treatments for their child's behavior problems. *Behavioral Disorders, 20*(3), 171–178. https://doi.org/10.1177/019874299502000305

Reynolds, C., & Kamphaus, R. (2015). *BASC-3: Behavior Assessment System for Children, Third Edition*. Pearson.

Safavi, P., Saberzadeh, M., & Tehrani, A. (2019). Factors associated with treatment adherence in children with attention deficit hyperactivity disorder. *Indian Journal of Psychological Medicine, 41*(3), 252. https://doi.org/10.4103/IJPSYM.IJPSYM_456_18

Tarver, J., Daley, D., & Sayal, K. (2014). Attention-deficit hyperactivity disorder (ADHD): An updated review of the essential facts: ADHD: an updated review of the essential facts. *Child Care, Health and Development, 40*(6), 762–774. https://doi.org/10.1111/cch.12139

Toomey, S. L., Sox, C. M., Rusinak, D., & Finkelstein, J. A. (2012). Why Do Children With ADHD Discontinue Their Medication? *Clinical Pediatrics*, *51*(8), 763–769. https://doi.org/10.1177/0009922812446744

Vaughan, B. S., March, J. S., & Kratochvil, C. J. (2012). The evidence-based pharmacological treatment of paediatric ADHD. *The International Journal of Neuropsychopharmacology*, *15*(01), 27–39. https://doi.org/10.1017/S1461145711000095

Wolraich, M. L., Hagan, J. F., Allan, C., Chan, E., Davison, D., Earls, M., Evans, S. W., Flinn, S. K., Froehlich, T., Frost, J., Holbrook, J. R., Lehmann, C. U., Lessin, H. R., Okechukwu, K., Pierce, K. L., Winner, J. D., Zurhellen, W., & Subcommittee on Children and Adolescents with Attention-Deficit/Hyperactive Disorder. (2019). Clinical practice guideline for the diagnosis, evaluation, and treatment of attention-deficit/hyperactivity disorder in children and adolescents. *American Academy of Pediatrics, 144*(4), e20192528. https://doi.org/10.1542/peds.2019-2528

Wong, I. Y. T., Hawes, D. J., Clarke, S., Kohn, M. R., & Dar-Nimrod, I. (2018). Perceptions of ADHD among diagnosed children and their parents: A systematic review using the common-sense model of illness representations. *Clinical Child and Family Psychology Review, 21*(1), 57–93. https://doi.org/10.1007/s10567-017-0245-2

Yeh, M., Aarons, G. A., Ho, J., Leslie, L. K., McCabe, K., Tsai, K., & Hough, R. (2014). Parental etiological explanations and longitudinal medication use for youths with attention deficit hyperactivity disorder. *Administration and Policy in Mental Health and Mental Health Services Research, 41*(3), 401–409. https://doi.org/10.1007/s10488-013-0477-5

APPENDIX A: Recruitment Flier

PARTICIPANTS NEEDED

You are invited to participate in a study on help-seeking related to parenting

Participation in this study would require

- You (the parent) filling out three additional questionnaires (which will take about 15-20 minutes) before, during or after your child's evaluation.
- Participate in a follow-up phone interview 8-10 weeks after the evaluation feedback appointment. This phone interview will take 15-20 minutes and will focus on help seeking related to parenting.
- Your permission to use information from the questionnaires you complete as part of your child's ADHD evaluation for the study (ratings of child behavior, questionnaire on parenting and parenting stress, child diagnosis, child age, ethnicity, parent age and education and family income).
- All your responses will be kept confidential

Participants may enter into a lottery for one of four $50 Amazon gift cards

The lottery entry form will ask for your name and phone number. The chance of winning is approximately 5-10%.

Please let one of the receptionists at the front desk know if you are interested in participating in this study

If you have any questions or concerns regarding this study, you may talk with one of the front desk staff or contact Liz O'Laughlin, PhD at 812-237-2455.

APPENDIX B: ADHD Beliefs and Attitudes Scale

This questionnaire asks for your opinions about possible causes of ADHD, characteristics of children with ADHD, and treatments for the disorder. Please read each statement and circle the extent to which you disagree or agree.

Note: For the purposes of this questionnaire ADHD also refers to diagnoses of ADD or ADD/H.

1. Medication is a safe treatment for ADHD.

1----------2----------3----------4----------5----------6----------7

Disagree Neutral Agree

2. ADHD is related to neurological functioning in the brain.

1----------2----------3----------4----------5----------6----------7

Disagree Neutral Agree

3. Special parenting techniques are helpful in managing ADHD.

1----------2----------3----------4----------5----------6----------7

Disagree Neutral Agree

4. Behavior management is an effective treatment for ADHD.

1----------2----------3----------4----------5----------6----------7

Disagree Neutral Agree

5. A combination of medication and behavior management is best for treating ADHD.

1----------2----------3----------4----------5----------6----------7

Disagree Neutral Agree

6. Training parents in behavior management is a useful treatment for ADHD.

1----------2----------3----------4----------5----------6----------7

Disagree Neutral Agree

7. It is likely that medications used to treat ADHD are effective because they alter the neurotransmitters in the child's brain.

1----------2----------3----------4----------5----------6----------7

Disagree Neutral Agree

8. The amount of structure in the child's environment (e.g., routines) can affect ADHD symptoms.

1----------2----------3----------4----------5----------6----------7

Disagree Neutral Agree

9. Medication is almost always an effective treatment for ADHD.

1----------2----------3----------4----------5----------6----------7

Disagree Neutral Agree

10. Clear, consistent rules and consequences are helpful in treating children with ADHD.

1----------2----------3----------4----------5----------6----------7

Disagree Neutral Agree

APPENDIX C: Written Analogue Questionnaire (WAQ)

Thinking about Child Behavior

Person Completing This Form: _____
Date: _____

We would like you to read a series of scenarios describing child behaviors and answer questions about each of them. Before you begin, however, please read the following information.

Several of the questions reflect judgments people often make when looking for an explanation for why a child behaved as he/she did. For example, suppose you are walking down the street one day and see a child fall down. In such a situation, you would probably wonder why this child fell down. Did he or she fall because of feeling faint or dizzy (something about the child), or was it because of something about the situation, perhaps there was a crack in the sidewalk. You might also wonder whether the child could help falling, for example, did he or she fall because of goofing off trying to walk backwards (cause was within the child's control), or was the action caused by something beyond the child's control. You could judge whether the cause for falling was something that occurred in only this one situation, for example the child had just stepped in water that made his or her shoes slippery, or whether the cause would occur in many situations, for example the child has a physical disability. You could also make a judgment as to whether the reason for the fall was a one time thing or something that will happen again in the future.

We realize that there can be many things which influence behavior at the same time, and acknowledge that it can be difficult to make these types of judgments. Remember, there are no right or wrong answers, and if you have difficulty judging, just go with your first impression.

Please remember to read each scenario as if it were a new behavior on a new day and try to vividly imagine you and your child in the scenario.

A. Your child enters the kitchen just as you have finished sweeping the floor and getting the dust in a pile to pick up. The child doesn't wait for you to finish and heads straight to the fridge. As he/she rushes through the kitchen, the pile of dirt scatters across the floor. Think of the one main reason for why your child walked through the dirt pile.

1. To what extent was your child's behavior caused by something about him or her versus something about other people or the situation?

1----------2----------3----------4----------5----------6----------7----------8----------9----------10
something about the child — something about other people/the situation

2. To what extent was your child's behavior caused by something within his or her control?

1----------2----------3----------4----------5----------6----------7----------8----------9----------10
not at all within his or her control — completely within his or her control

3. To what extent is the reason your child walks through the dirt pile something that happens in many situations versus something that is specific to this situation?

1----------2----------3----------4----------5----------6----------7----------8----------9----------10
happens in many situations — specific to this situation

4. To what extent is the reason your child walks through the dirt pile something that is a one-time thing or something that is likely to happen again in the future?

1----------2----------3----------4----------5----------6----------7----------8----------9----------10
a one time thing — will happen again in the future

5. To what extent were you responsible for your child's behavior?

1----------2----------3----------4----------5----------6----------7----------8----------9----------10
not at all responsible — very much responsible

B. Your child and the family are sitting at the kitchen table. There is an outdoor field trip scheduled for that day and you are listening for the weather forecast on the TV. Just as the weather comes on, your child begins to talk loudly. Think of the one main reason your child talks loudly during the weather forecast.

C. You ask your child to pick up his/her toys. A few minutes later your child says, “I’m done.” When you walk in the room you notice that most of the toys are picked up however there are still several toys laying on the floor. Think of the one main reason your child did not pick up some of the toys.

D. You are on the phone with a friend and your child asks you a question. You ask him/her to wait until you are off the phone. A few minutes later, while you are still on the phone, your child loudly asks you the same question again. Think of the one main reason for why your child loudly asks you the question again while you are still on the phone.

E. You and your child are playing a board game. You are almost to the finish line and your child is losing. Just before the next round of play, your child knocks the board game pieces onto the floor. Think of the one main reason your child knocks the board game pieces onto the floor.

F. Your child is playing a videogame in the family room. When you call him/her for dinner, he/she does not answer. You go into the room and tell him/her to come to the table. Your child shakes his/her head, saying that he/she won’t stop playing and doesn’t want to eat dinner. Think of the one main reason for your child won’t stop playing.

G. Your child is in the bathroom getting ready for school. As you walk past the bathroom, you remind him/her to brush his/her teeth. Your child refuses, telling you that his/her teeth do not need to be brushed. Think of the one main reason for why your child refused to brush their teeth.

APPENDIX D: Modified Adherence Telephone Interview

Subject #_____
Date of feedback session_____
Date phone interview completed_____

"Hello, is Mr./Mrs./Ms._____ available (ask for person that signed the consent form)? Hello, _____, my name is_____ and I'm calling from the ADHD Evaluation clinic at ISU. The day that you came for feedback on your child's evaluation at the ADHD clinic, you also agreed to participate in a study giving us some information on how your child was doing two months after the evaluation. Do you remember agreeing to a phone interview?

(If yes, proceed with telephone interview, if not, give more information to help parent remember what the study is about, length of phone interview, etc.)

You might remember that there were several suggestions or recommendations at the end of your child's evaluation that you probably discussed during the feedback session. I'd like to go over those recommendations and find out which of them have worked out for you and your child since the evaluation. We realize that not all of the suggestions or recommendations may have been helpful to you or that you may have run into problems in being able to follow through on the suggestions. After reading each recommendation, I'll be asking you how important you felt this recommendation or suggestion was for you and your child. I'll then ask to what extent you were able to follow through on that specific suggestion or recommendation. Lastly, I'll read you a list of things that may have gotten in the way of being able to follow through on the suggestion and ask you to tell me which items made it difficult for you to carry out the suggestion or recommendation. Does that make sense? (Answer any questions they have about the interview process.)

Remember, this information is confidential. I will not tell the person who gave you these recommendations what you say today. All information that you give me today will be recorded by a number only, not by using names or any other identifying information. I will give you a chance at the end of my interview to ask questions. If you have any specific concerns or questions about your child's care, then I can have Dr. O'Laughlin or one of the graduate student therapists at the ADHD Clinic call you back to answer your question. Does that sound okay?

(if yes, proceed with interview; if no, respond to questions and/or suggest that Dr. O'Laughlin or Jessie D'Amico call the parent back to talk about his/her participation in the study.)

The first recommendation was:
Recommendation #___: _____

_____

_____

"Part of the feedback session regards resources, have you utilized any resources regarding ADHD, either the ones provided or others that you have found?

On a scale of one to five, with 1 being "Not important," 3 being "Somewhat important" and 5 being "Extremely important," how important did you think this recommendation was?
(Circle response)

1	2	3	4	5
Not important		Somewhat important		Extremely important

Comments made by parent: _____

_____

_____

_____

On a scale of one to five, with 1 being "Not at all," 3 being "Somewhat," and 5 being "Completely," please tell me how much you think you followed this recommendation:
(Circle response)

1	2	3	4	5
Not at all		Somewhat		Completely

Comments made by parent: _____

_____

_____

_____

I will now read you a list of reasons some people have for not following recommendations. Please think about each reason and decide whether it was a reason you had for not following the recommendation, or if the item made it more difficult for you to follow the recommendation. If the reason was true for you please say "yes " and it the item was not a problem, please say "no."

1. Didn't think it would help	YES	NO
2. No longer a problem	YES	NO
3. Resources not available or not aware of where to find resource/service	YES	NO
4. Transportation	YES	NO
5. Insurance /cost	YES	NO

6. Time YES NO
7. Forgot to do it YES NO
8. *Prefer to deal with problem on my own/not talk with others about my child* YES NO
9. COVID YES NO
*9. Was there any other reason that I did not mention that made it more difficult for you to follow this recommendation?*_____

_____
_____
_____
_____

Now, I would like us to do the same thing with the remainder of the recommendations. First, I will read you the recommendation then I will read you the list of reasons.

*Continues for each recommendation.

Have you sought out any services or received help related to your child's difficulties that were not included in the psychological evaluation/ recommendations?

(If yes, ask for more info)

APPENDIX E: Parent Help-Seeking Questionnaire

The following are possible types of services that may be recommended for you and your child following the ADHD Evaluation, as well as other types of support that you may find helpful in coping with difficult child behavior. Please indicate, based on your current experiences and concerns, which types of services or supports you would most likely be interested in.

	Absolutely Not			Maybe			Definitely
Child-focused counseling services (for example: individual child therapy, play therapy)	1	2	3	4	5	6	7
Parenting counseling services (for example: parenting education, behavioral parent training)	1	2	3	4	5	6	7
Family-focused counseling services (for example: family therapy)	1	2	3	4	5	6	7
School-based services (for example: extra time on tests, different seating)	1	2	3	4	5	6	7
Seeking out academic help for my child (for example: tutoring, workbooks, educational games)	1	2	3	4	5	6	7
Talking with a doctor about medication	1	2	3	4	5	6	7
Talking with family and friends	1	2	3	4	5	6	7
Other support (for example: religious leader, other parents)	1	2	3	4	5	6	7
Use of vitamins/diet supplements (for example, omega-3, eliminating red dye, CBD oil)	1	2	3	4	5	6	7
Seeking information about ADHD on your own (for example: books, websites)	1	2	3	4	5	6	7
Seeking information about parenting on your own (for example: parenting books, websites)	1	2	3	4	5	6	7
Other: _____ (please describe above)	1	2	3	4	5	6	7