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ADHD Knowledge: Support for Current Measures and Connections to Stigma and Intervention

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ADHD KNOWLEDGE: SUPPORT FOR CURRENT MEASURES AND CONNECTIONS TO STIGMA AND INTERVENTION

by

Megan E. Golson

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ABSTRACT

ADHD Knowledge: Support for Current Measures and Connections to Stigma and Intervention

by

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Utah State University, 2024

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Attention-deficit/hyperactivity disorder (ADHD) symptoms, associated behaviors, and the presence of commonly co-occurring disorders can result in a variety of suboptimal outcomes for individuals with ADHD. Timely identification and intervention are warranted to increase the likelihood of positive outcomes for individuals with ADHD. Research suggests that ADHD knowledge is related to increased intervention favorability across samples and intervention types. However, further study is necessary to evaluate the quality and appropriateness of existing ADHD knowledge measures and to understand the causal mechanism connecting ADHD knowledge and intervention favorability. The two studies in this dissertation are related to this goal. In the first study, we systematically reviewed 94 ADHD knowledge measures used in 163 publications and found that approximately one-third of all measures did not have reported psychometric evidence. Additionally, most measures were designed for and validated with only one population—most commonly general education teachers. Given the differences in knowledge expectations across populations, this limits the generalizability of existing measures without adaptation. In the second study we investigated of the mediating role of

decreased stigma in the relation between increased ADHD knowledge and intervention favorability in a sample of 266 parents of children with ADHD. It was hypothesized that increased ADHD knowledge leads to decreased stigma, which results in greater intervention favorability. While a direct effect of ADHD knowledge on intervention favorability broadly was not supported, ADHD knowledge and ADHD stigma were directly and indirectly, respectively, associated with increased favorability for medication. The relations between ADHD knowledge, ADHD stigma, and intervention views appear to be complex, requiring further investigation. Further improved understanding of these relations will illuminate avenues to promote intervention use and inform ADHD psychoeducational and public health programming.

(267 pages)

PUBLIC ABSTRACT

ADHD Knowledge: Support for Current Measures and Connections to Stigma and Intervention

Megan Golson

Many children with attention-deficit/hyperactivity disorder (ADHD) may be at-risk for social, educational, and daily functioning challenges. Identifying ADHD and beginning intervention as early as possible improves outcomes for children with ADHD. Research suggests that parents, teachers, and the general population have more favorable opinions about ADHD interventions the more they know about ADHD. While many measures of ADHD knowledge have been created to measure this, there is little research on the validity of these measures. Further, additional research is needed to better understand relation between ADHD knowledge and intervention favorability. The two studies in this dissertation aim to fill these gaps. The first study is a systematic review of 94 ADHD knowledge measures found in 163 publications. Approximately one-third of the measures did not have reported psychometric evidence and most measures were designed for only one population, which limits the use of measures across populations. The second study investigated the role of decreased stigma in the relation between increased ADHD knowledge and intervention favorability in a sample of 266 parents of children with ADHD. Results supported a direct effect of increased ADHD knowledge on increased favorability toward intervention for children with ADHD and medication as an intervention. The role of ADHD stigma in this relation was not well supported. Overall, additional research regarding ADHD knowledge, ADHD stigma, and intervention is

needed to help researchers, practitioners, and public health agents promote intervention use.

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Megan Golson

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CHAPTER I

GENERAL INTRODUCTION

Attention-deficit/hyperactivity disorder (ADHD) is a neurodevelopmental condition characterized by a pattern of inattention and/or hyperactivity and impulsivity. An individual may present with symptoms from both or either inattention and hyperactivity/impulsivity to be identified (American Psychiatric Association [APA], 2023). The prevalence rates of ADHD vary extensively, but a global prevalence is estimated to be 5-7.2% in children (Abdelnour et al., 2022). Race, ethnicity, and gender impact a person's likelihood of receiving timely and proper identification. Racially and ethnically minoritized (REM) groups are less likely to be identified than their White peers (e.g., Morgan et al., 2014), and girls and women are often identified later in life or not at all (Walters, 2018).

In addition to the symptoms and behaviors characteristics, ADHD often co-occurs with several behavioral and mood disorders including oppositional defiant disorder (ODD) and conduct disorder (CD) (Barkley, 2015), substance use disorders (Charach et al., 2011), and mood disorders such as anxiety or depression (Sandstrom et al., 2021). Individuals with ADHD are also at greater risk of having learning disorders (APA, 2023), aggressive behavior, and engaging in risk-taking activities (Nigg & Barkley, 2014). Taken together, ADHD and its myriad of co-occurring conditions result in a variety of potential suboptimal outcomes for individuals including greater risk of encounters with school discipline and the criminal justice system (Bussing et al., 2012; Robb et al., 2011), peer rejection and bullying (Grygiel et al., 2018), and academic and occupational

challenges (Barkley & Fischer, 2011). Importantly, the likelihood of suboptimal outcomes decreases as access to timely identification and intervention increases (e.g., Arnold et al., 2020; Tarver et al., 2015).

Identification of ADHD is the result of a multi-method assessment process that can take place in clinical or educational settings. However, it is important to distinguish between a clinical or medical diagnosis and educational identification under the classification of Other Health Impairment (OHI). The former relies on criteria set forth in the *Diagnostic and Statistical Manual for Mental Disorders, Fifth Edition-Text Revision* (APA, 2023) while the latter classification is a much broader category not limited to ADHD and does not necessarily translate to a clinical diagnosis and related services. Further, educational identification uses state and federal criteria to provide support for the receipt of educational services (Individuals with Disabilities Educational Improvement Act, 2004). A child may receive a diagnosis of ADHD but not qualify for special education due to the additional requirement that ADHD impact the student's educational functioning. Regardless of setting or identification type, best practice assessment for ADHD often includes observation, direct measures, rating scales, interviews, and a review of records. The use of multiple methods and informants is crucial to increasing the accuracy of assessment results and informs intervention planning (DuPaul & Stoner, 2014).

Following identification, intervention options for ADHD range considerably with stimulant medication being the most common option; an estimated 3-6% of all insured children—not just those with ADHD—in the United States are prescribed stimulant medications as part of their intervention program (Danielson et al., 2023). However, the

American Academy of Pediatrics recommends school-aged children receive a combination of stimulant medication *and* behavioral intervention (Wolraich et al., 2019). Behavioral interventions for ADHD can include self-monitoring training (Sluiter et al., 2020), token economies (Coelho et al., 2015), and executive functioning skills training (DuPaul & Stoner, 2014). For children in preschool, parent training is also an efficacious approach (Wolraich et al., 2019). Within school settings, the use of peer-delivered intervention (Sibley et al., 2020) and study skills training (Breaux et al., 2019) can also support learning. Most frequently, students with ADHD receive accommodations such as preferential seating, visual schedules, and structured time supports for tests and assignments, though there is limited evidence to support or refute the efficacy of these strategies (Lovett & Nelson, 2021).

Knowledge of ADHD appears to be a critical factor in increasing teacher (Vereb & DiPerna, 2004), parent (Corkum et al., 1999), and lay population (Sciutto, 2015) favorability toward intervention services. When intervention favorability and ADHD knowledge are high, the likelihood a person will pursue intervention increases (Corkum et al., 1999). In addition to increasing intervention use, ADHD knowledge among practitioners is also critical in improving service quality (Perle & Vasilevskis, 2021) and self-efficacy (Sherman et al., 2008). Among the general population, ADHD knowledge is associated with decreased stigma (Kosyluk et al., 2016). Given the importance of ADHD knowledge for a variety of populations and its relation to other constructs (e.g., intervention favorability, stigma), research related to this construct is vital. However, ADHD knowledge studies are often limited to understanding of symptoms (Climie & Henley, 2018) rather than its relation to causes and outcomes (Gilmore, 2010). Increased

research related to ADHD knowledge, including how to improve it across populations, is warranted. Subsequent chapters in this dissertation examines critical issues related to ADHD knowledge, including measurement of the construct and its relation to stigma and intervention favorability.

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CHAPTER II

A SYSTEMATIC REVIEW OF ADHD KNOWLEDGE MEASURES AND THEIR PSYCHOMETRIC SUPPORT

The first manuscript is titled *A Systematic Review of ADHD Knowledge Measures and Their Psychometric Support*. The authors are Megan E. Golson, Maryellen Brunson McClain, Jennifer Ha, Renae Stigler, Jac'lyn Bera, Kaelah E. B. Kieffer, and Abigail Gibson. The manuscript was accepted for publication in the *Journal of Pediatric Psychology* on December 13, 2022. The remainder of this chapter is a reprint of the published manuscript published in 2023. It can be found in the *Journal of Pediatric Psychology* in Volume 48, Issue 4, pages 356-374.

Introduction

Attention-deficit/hyperactivity disorder (ADHD) is a neurodevelopmental disorder characterized by a pattern of inattention and/or hyperactivity and impulsivity (American Psychiatric Association [APA], 2013). Systematic reviews of prevalence studies indicate ADHD occurs in 2%–7% of children worldwide. However, identification rates vary by country, sex, and race/ethnicity with clear disparities that underrepresent girls and racially and ethnically minoritized (REM) individuals. For example, Black and Latinx children (especially those for whom English is their second language) are less likely to receive an ADHD diagnosis compared to their White peers (Morgan et al., 2014). Females have diagnosed with ADHD an average of 5 years later than males and an estimated two-thirds of females with ADHD remain undiagnosed (Walters, 2018).

For both diagnosed and undiagnosed children, having ADHD poses significant challenges for many. In addition to symptoms—such as disorganization, difficulty regulating attention, restlessness, and increased motor activity (APA, 2013)—ADHD is associated with possible suboptimal academic and social outcomes. Many children with ADHD demonstrate lower performance on academic achievement measures and in-class academic tasks compared to their neurotypical peers even when controlling for cognitive abilities (Arnold et al., 2020). Additionally, children with ADHD are more likely to experience peer rejection (which is positively correlated with hyperactivity) and perceive social relationships more negatively than their neurotypical peers (Grygiel et al., 2018; Nigg & Barkley, 2014). ADHD is also associated with several possible lifelong suboptimal outcomes. Adolescents and adults with ADHD are more likely to have substance use disorders and have greater encounters with law enforcement (Bussing et al., 2012). Goffer et al. (2020) note young adults with ADHD report difficulty managing deadlines and maintaining employment. ADHD is also often co-occurring with conduct disorders (Barkley, 2015), learning disorders (Charach et al., 2011), and mood disorders (Jarrett & Ollendick, 2008), which pose their own unique risks and treatment requirements.

Given the prevalence of ADHD and its proximal and long-term impacts, it is imperative that both professionals likely to serve children with ADHD and the general public have a sufficient knowledge of ADHD. Because accurate knowledge of ADHD and its presentation is essential to appropriate and timely identification and intervention, professionals, particularly pediatricians and psychologists, must receive adequate technical training in assessing, diagnosing, and interventions for ADHD (Perle &

Vasilevskis, 2021). Increased knowledge of ADHD is also associated with increased self-efficacy to serve children with ADHD (Sherman et al., 2008). ADHD knowledge is also vital to ensuring professionals make appropriate referrals to specialists and/or create effective treatment plans for children with ADHD (Salt et al., 2005). Unfortunately, several professional populations demonstrate inadequate training in ADHD, including general education teachers (e.g., Greenway & Edwards, 2020), medical professionals (e.g., Adamis et al., 2019), and mental health providers (e.g., Frankenberger et al., 1990). Notably, the knowledge expectations for professionals such as medical doctors or psychologists are significantly different compared to parents and peers.

There are significant benefits to increased knowledge of ADHD in lay populations as well. Previous research has highlighted the importance of knowledge interventions in reducing stigma toward mental health disorders like ADHD (Kosyluk et al., 2016). Increased knowledge is associated with more positive perceptions of ADHD (Barnett et al., 2012; Youssef et al., 2015). Increased knowledge of ADHD and its symptoms is also associated with earlier identification since parents and community members are often the first to observe and voice concerns about children (Park et al., 2018), prompting professional evaluation. Knowledge of ADHD can also increase public awareness of intervention options (Pescosolido et al., 2008) and is associated with increased positive attitude toward accessing ADHD services among parents and people with ADHD (Taylor & Antshel, 2021). Current research suggests mixed findings related to parent and lay population knowledge. For example, while recognition of ADHD symptoms is fairly common (Climie & Henley, 2018), causes and prognosis are less well known (Gilmore, 2010). Effectively evaluating the current state of ADHD knowledge, its

relationship to other constructs and outcomes, and tracking learning over time requires standardized measurements.

As the benefits of psychoeducation have become more widely known, several standardized measures of ADHD have been created (e.g., Knowledge of Attention Deficit Disorders Scale [KADDS], Sciutto et al., 2000; Knowledge of ADHD Scale, Kos et al., 2004). However, no published summary of their varying content and psychometric quality exists to-date. Other fields have attempted to address this issue through systematic reviews of present measures and their psychometric quality to aid researchers in determining what measures meet their study's goals (e.g., Harrison et al., 2017). Ensuring measures of ADHD knowledge have reported and updated psychometric support relevant to the sample of interest improves the precision and validity of the measurement.

Though knowledge has been demonstrated to differ by occupation, relationship to persons with ADHD, and other demographic factors, such as race (Bussing et al., 2012; Gerdes et al., 2013) and gender (e.g., Gerdes et al., 2020), it is unknown if or how many measures have been validated for these subpopulations. Without an accurate understanding of the psychometric support for these measures within the populations with which they are employed, the resulting findings stand on shaky ground. A thorough review of the psychometric support and validation populations is needed to evaluate the appropriateness and quality of currently published ADHD knowledge measures.

Current Study

The current study is a systematic review of studies including an investigation of ADHD knowledge using an ADHD knowledge measure. The study is guided by two

central questions. First, what psychometric support is reported for each published ADHD knowledge measure? Second, for what populations are the measures validated? Specifically, what was the responding population of interest, and to what extent were REM populations represented in the validation sample for the knowledge measure? Understanding the answers to these questions will aid in the evaluation and selection of appropriate ADHD knowledge measures used in both research and applied contexts.

Method

Literature Search

M.E.G. manually conducted the literature search in four phases using the three databases: PsycINFO (1620–Present), ERIC (1966–Present), and PubMed (1996–Present). Publications identified that included the keywords "knowledge," "awareness," "understanding," or "training" paired with the terms "ADHD" or "attention deficit hyperactivity disorder" in either the title or abstract were reviewed. No other restrictions (e.g., publication date) were used. To be included in the review, the articles had to include a direct measure of ADHD knowledge used for original data collection and have translations or original versions of the publication available in English. A direct measure of ADHD knowledge was operationalized as an assessment tool with correct answers regarding ADHD. No exclusion criteria related to study design, participant population, or other factors were employed in order to capture as many knowledge measures as possible. To reduce the possibility of publication bias, theses and dissertations were included in addition to peer-reviewed publications.

In the first phase, this search yielded 550 possible publications from PsycINFO, ERIC, and PubMed databases. Of these, 95 duplicates were removed prior to review of abstracts for inclusion criteria. A total of 154 articles met the inclusion criteria and were retrieved for coding. An ancestral search manually and collaboratively conducted by M.E.G. and J.H. produced 48 additional, nonduplicate studies based on the review of article abstracts, titles, and methods sections for the aforementioned inclusion criteria. An additional 28 articles were removed during the coding process based on a thorough review of the article methods for a total of 163 articles included in the review. This review was not preregistered but was conducted in accordance with Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) guidelines, with predetermined inclusion criteria, literature review procedures, and coding strategies. While measure quality was assessed (see below), study quality was not as outcome variables and design of the studies were not relevant to the current investigation. See Figure 1 for an illustration of the article search, review, and selection processes.

Development of the Code Book

M.E.G. created the data entry database and code book in Research Electronic Data Capture (REDCap; Harris et al., 2019), an Internet platform for secure data collection and entry. The code book was developed to collect relevant information from selected studies to evaluate the two research questions of the project and included: the population of interest, the representation of REM participants, and the quality and response options of ADHD knowledge measures used. General article information, including the year of publication, author, and journal name, was also recorded. After

development, the entire research team reviewed the coding structure together for readability and coding ease. See Appendix B for the finalized form.

Coder Training

Coder training occurred over the course of two sessions. First, the entire coding team (M.E.G., J.H., R.S., J.B., K.E.B.K, and A.G.) met for a 1-hr coder training. During this time, M.E.G. reviewed the completed code book and coding process. After each member

had the opportunity to clarify the coding process and everyone indicated they understood, the team was assigned three randomly selected articles to code from the 163 included articles in pairs. For each article, the pairs independently coded the first author's last name, publication year, publication outlet (i.e., peer reviewed article, dissertation, etc.), and the study purpose

as described in the abstract and current study section of the manuscript. The pairs then independently coded the sample information. They recorded the population included (e.g., parents, medical doctors, etc.), the sample size, the country of study, and whether racial and/or ethnic demographic information was reported. If reported, each coder transcribed the proportion of each race/ethnicity comprised in the sample.

Regarding the knowledge measure, coders coded the name of the measure, whether it was qualitative and/or quantitative, the response format used, whether psychometric information was reported for a previous sample using the measure, whether psychometric information was reported for the measure in the current sample, what types

of reliability and validity information were reported, psychometric values (if provided), and whether the measure was provided in the publication.

Using this information, each measure was coded using Cohen et al. (2008) criteria for evidence-based measures, as previous systematic reviews of measures have done (e.g., Harrison et al., 2017). These criteria assign one of three descriptors ("well-established," "approaching well-established," and "promising assessment") based on the number of publications a measure has been investigated in, details regarding measure development, and reported reliability and validity evidence. Per Cohen et al. (2008), a "well-established" measure must be present in two different publications by different investigators in at least one of which statistics are presented indicating good reliability and validity. A measure that is "approaching well-established" must also be presented in two different publications, but the authors may be the same; and the associated reliability and validity support can be presented without associated statistics (in "vague terms") or with moderate values. Finally, the criteria for a "promising assessment" includes that the measure is published in at least one article and the associated reliability and validity support again be presented without statistics (in "vague terms" or with moderate values). In each case, to be evaluated, Cohen et al. (2008) stipulate that measures must be sufficiently described to allow for critical evaluation. As such, a fourth descriptor was employed in this study to code measures that did not include sufficient information to qualify for one of the previous three (i.e., did not include sufficient information, included only evidence for one psychometric type, psychometric values too low to be considered moderate). During a second 1-hr meeting coding responses were

reviewed together. All discrepancies were discussed and consensus was achieved before article coding was initiated.

Coding Process

Each coding pair was assigned to code a randomly assigned one-third of the collected articles. The coding process for each partnership included a full review of the article for inclusion and the recording of all variables specified in the code book using the REDCap (Harris et al., 2019) data entry form. Following the completion of independent coding, each partnership

met to discuss and resolve coding discrepancies. Intercoder reliability prior to achieving consensus via discussion for the three partnerships was $r = 0.938$, $r = 0.942$, and $r = 0.949$. The review protocol and workflow used by the research team are available upon request.

Data Analysis

During the coding process, each knowledge measure was given a unique identifier to accurately track the number of measures currently in the literature. Modifications and translations of measures were also given a separate identifier since many measures did not identify the degree of modification to allow for evaluation of similarity to the original measure (McClain et al., in review). The resulting count was 96 measures. The Cohen score, frequencies of each reliability type reported (i.e., internal consistency, test– retest), and each validity type reported (i.e., face, convergent, discriminant, criterion, construct, content) for the 96 resulting measures were calculated. Then, the frequencies of each

population of interest (e.g., parents, special education teachers, doctors) and REM populations for each measure were also calculated for articles reporting validation of a measure. Articles using previously validated measures in a new population were not included in this analysis if they did not validate the measure in their sample since the research question regarding populations of interest concerns validation populations only. See Tables 1 & 2 for selected descriptive information for included articles.

Results

Reported Psychometric Support

Of the 96 measures found across 163 articles, less than half included statistical evidence of reliability (n = 40, 41.7%). A marginal few more included a discussion of reliability in vague terms (n = 42, 43.8%). The most common type of reliability evidence reported across all 96 measures was internal consistency (n = 40, 41.7%), followed by test–retest reliability (n = 10, 10.4%). Discussion of validity was slightly more common across the 96 measures (n = 52, 54.2%). However, significantly fewer articles included statistical analyses and/or data to support the validity claims (n = 7, 7.3%). Within validity, content validity (n = 32, 33.3%) and face validity (n = 29, 30.2%) were the most common. Convergent (n = 2, 2.1%) and discriminant validity (n = 1, 1.0%) were less likely to be discussed for ADHD knowledge measures. Considering the lack of reliability and validity evidence overall, it is unsurprising that the majority (n = 69, 71.8%) of measures had insufficient information or too poor of psychometric quality to be coded as an evidence-based assessment using the Cohen et al. (2008) scheme. In many of these

cases, accounting for 34.4% of all measures, absolutely no psychometric evidence was reported or discussed.

Promising Assessments

Seventeen (17.8%) measures were coded as "promising assessments." Of these, the unnamed knowledge measure by Khademi et al. (2016)—which included moderate internal consistency and test–retest values and discussed face and content validity evidence without statistical evidence—the ADHD Knowledge-Based Questionnaire (Stampoltzis & Antonopoulou, 2013)—which included moderate internal consistency values and significant construct validity statistics—and the ADHD-Specific Knowledge Scale (Greenway & Edwards, 2020)—which included strong internal consistency values and strong construct validity statistics but had only been included in one publication—were the most promising. The remaining 14 measures coded as "promising assessments" had the same two similarities: while they provided either internal consistency or test–retest statistical values; face, content, or criterion validity evidence was only discussed vaguely.

Approaching Well-Established Assessments

Seven measures (7.3%) were coded as "approaching well-established": the ADHD Beliefs Scale (Weyandt, 2009), the ADHD Knowledge and Opinion Scale (AKOS; Corkum et al., 1999), the AKOS-Revised (AKOS-R; Bennet, 1996), the Questionnaire to Assess Teacher's Knowledge of ADHD (QATKA; Soroa, 2012), an unnamed measure developed by Bussing et al. (1998), an unnamed measure developed by

Ghanizadeh et al. (2006), and an unnamed measure developed by Jerome et al. (1994). Four measures included four types of psychometric evidence, one measure included three types, and two measures included two types. Similar to the "promising assessments," these seven commonly included reported reliability statistics for internal consistency and/or test–retest reliability. However, only two measures, the ADHD Beliefs Scale and the unnamed measure by Bussing et al. (1998) reported validity statistics rather than discussing face, construct, criterion, or convergent validity in vague or summative terms. Interestingly, while the AKOS was present in the most publications (n = 7), it had the most heterogeneity in psychometric evidence, with test–retest values ranging from r = 0.15 to 0.75 and Cronbach's alpha values ranging from α = 0.54 to 0.71. By contrast, the unnamed measure by Bussing et al. (1998) had been used in four publications and had test–retest values ranging from r = 0.78 to approximately 0.99, which is both more acceptable and less variable.

Well-Established Assessments

Only three measures qualified as "well-established": the Knowledge of ADHD Rating Evaluation (KARE; Vereb & DiPerna, 2004), the KADDS (Sciutto et al., 2000), and an unnamed measure developed by Awadalla et al. (2016). The KADDS (Sciutto et al., 2000) had the most psychometric evidence, including reported statistics for internal consistency (α = 0.38– 0.92), test–retest reliability (r = 0.59–0.76), and criterion validity (r = 0.23), as well as discussion in of face, convergent, discriminant, and construct validity in vague or summative terms collectively across the articles in which it appeared. By contrast, the other two "well-established" measures sported fewer types of

psychometric evidence. The KARE included internal consistency, test–retest reliability, face validity, and content validity; and Awadalla et al.'s (2016) measure included internal consistency and content validity statistics. Notably, in comparison to the significant heterogeneity in values seen across the KADDS' internal consistency and, to a lesser degree, test–retest reliability values, the KARE is less heterogeneous: α = 0.58–0.81, r = 0.76–0.80 (see Table I).

Populations with Psychometric Evidence

Most of the 96 measures were only used and evaluated in one population (n = 57, 59.4%). However, 23 (23.9%) measures were used in two populations, and seven measures (7.3%) were used in four or more distinct populations. The KADDS (Sciutto et al., 2000) was the most widely used measure; it was used and/or evaluated for psychometric evidence in 12 different populations. Measurement of ADHD knowledge in general education teachers were most common (n = 57, 59.4%), followed by parents (n = 19, 19.8%), and special education teachers (n = 15, 15.6%). Medical doctors (n = 6, 6.3%) and school psychologists (n = 6, 6.3%) appeared with similar frequency in the dataset. Measurement of ADHD knowledge in populations of professional trainees was uncommon overall. Only four measures (4.2%) were used to evaluate ADHD knowledge in these populations. Measures that evaluated ADHD knowledge in siblings (n = 1, 1.0%) or psychologists (n = 1, 1.0%) were the least common.

Of the 89 articles that reported psychometric evaluations in their sample, only 17 (18.1%) reported the racial and ethnic demographics of their participants. Of these 17, 14 were published in the United States, one in Canada, one in Saudi Arabia, and one in

Qatar. Across these, the multiracial and Pacific Islander/Native Hawaiian populations were unrepresented. On average, 70.9% of the study samples were White. Otherwise, there was significant variability in the degree of racial and ethnic representation. Latinx populations constituted 26.8% of the sample on average (*SD* = 33.8), and Black individuals composed an average 13.6% of the sample (*SD* = 13.1). Asian, Native American, and "Other" racial and ethnic groups (e.g., studies that collapsed multiple racial and ethnic identifications) constituted less than 8% of the sample on average, respectively. Only one study—conducted in Saudi Arabia and using the unnamed measure by Awadalla et al. (2016)—reported including Middle Eastern/North African participants, comprising 81% of their sample. Significantly, those measures designated "well-established" or "approaching well-established" were often those with which REM populations were validated. For example, the KADDS (Sciutto et al., 2000) has been used in samples of primarily Latinx (Ramos, 2008) participants. Additionally, the unnamed measure by Bussing et al. (1998) has been used consistently in samples constituted at approximately half by Black participants (Bussing et al., 1998, 2007, 2012). Unfortunately, there are no strong measures validated with significant sample representation from other racial and ethnic groups (see Table 2).

Discussion

In this study, we reviewed ADHD knowledge studies to investigate the reported psychometric evidence for ADHD knowledge measures as well as the characteristics of the populations the measures were used to evaluate. Within the 163 articles reviewed, 96 distinct ADHD knowledge measures were used. However, this impressive quantity of

measures is in stark contrast to the limited reporting of psychometric evidence—approximately a third of these measures were not accompanied by any reported psychometric support of any type—and the lack of psychometric quality. Lack of psychometric information in publications limits the ability of researchers to evaluate a measure and the validity of findings on which it is based. The lack of psychometric support for ADHD knowledge measures may be due to several factors, including a lack of proper psychometric investigation prior to the measure's use. Alternatively, authors may not be reporting the existing psychometric evidence for ADHD knowledge measures they did not develop themselves. However, this is unlikely as the majority of measures were developed for and used in only one study. Further research is needed to understand this lack of psychometric evidence and address it in the literature for the improvement of measure and research quality. Researchers, clinicians, and trainers interested in evaluating ADHD knowledge should reconsider creating new ADHD measures and instead evaluate or improve existing measures.

Among the remaining measures boasting reported psychometric support, it was uncommon to find psychometric evidence of more than one type, suggesting researchers are either investigating reliability or validity of their measure, but not both. Less than half of the ADHD knowledge measures were accompanied by reliability evidence and only half sported validity evidence. The lack of reliability evidence is concerning especially related to ADHD knowledge research as these measures are often involved in psychoeducational program evaluation (e.g., Graeper, 2011; Lasisi et al., 2017). Without reliability evidence—in particular, test–retest reliability—researchers have a limited capacity to track improvement in ADHD knowledge over time. The lack of reported

validity evidence is also concerning as it hinders reviewers' ability to evaluate the measure in use and the study's findings. Without support for the validity of a measure, researchers and practitioners cannot be confident that the measure in question accurately assesses the construct to which it claims. However, evidence of both reliability and validity is required for consideration as an evidence-based measure per Cohen et al. (2008). Without inclusion of both evidence types, it is clear why so many ADHD knowledge measures fail to meet this standard. When selecting ADHD knowledge measures, the authors recommend that preference be shown to measures with both reliability and validity evidence.

Though the majority of measures lacked sufficient and/or strong psychometric evidence, there were three measures that meet the criteria of "well-established" per Cohen et al. (2008): the KARE (Vereb & DiPerna, 2004), the KADDS (Sciutto et al., 2000), and an unnamed measure by Awadalla et al. (2016). An additional seven measures showed promise and, with additional validation and investigation, could be considered "well-established" as well. A crucial part of this effort will be expanding the use of these measures to additional research teams and populations. This review illustrates that most ADHD knowledge measures are designed for and validated with only one population—another possible explanation for the sheer number of ADHD knowledge measures in the literature. As researchers investigate ADHD knowledge in new populations, new measures are developed rather than validating existing measures across populations. Changing this precedent and focusing on building the psychometric support of existing measures may help not only to address the limited psychometric evidence in the literature but also increase the number of available measures for researchers working across

populations. The KADDS is one example of this already within the field; though there is significant heterogeneity in the psychometric strength of the measure across populations, the repeated investigation has amassed sufficient evidence with which researchers can evaluate the measure for their purposes. Researchers would prioritize validation of existing ADHD knowledge measures in their samples in pursuit of stronger, more established measures.

This review highlights that general education teachers are the most researched population related to ADHD knowledge. This is important as teachers serve students with ADHD daily; however, additional research is needed to understand the knowledge levels of parents and siblings of people with ADHD, special education teachers, medical and mental/behavioral health professionals, and trainees within the aforementioned fields. Expanding ADHD knowledge research to these populations is important for several reasons, including the different roles each of these populations has for people with ADHD. Each distinct role is associated with different knowledge expectations that cannot be generalized from the findings gleaned from research with another population. As such, clinicians and researchers implementing knowledge measures should consider the populations with which a measure has been validated when selecting a tool to evaluate the construct. When evaluating multiple populations with a single tool, well-established measures such as the KADDS (Sciutto et al., 2000) may be most appropriate. However, when evaluating specific, single populations (e.g., parents, doctors), readers are encouraged to examine reviews such as these and the validation information of individual measures to find the most appropriate tool.

Finally, this review investigated the level of representation for REM populations in ADHD knowledge research, particularly in relation to the validation of measures for use with them. Previous research suggests that some REM groups may be less knowledgeable about ADHD (e.g., Bussing et al., 2007). However, additional research is needed to understand the root of these potential knowledge gaps and how to address them, which requires reliable and valid ADHD knowledge measures for REM respondents. Despite this, less than a quarter of the reviewed studies reported race and/or ethnicity data for their validation samples. Of those articles that included these data, sample demographics were overwhelmingly White. Although the majority of these reporting studies were conducted in the United States, this is a vast underrepresentation given the international arena from which this review drew. Not only is 70.9% an overestimation of White composition in the United States—compared to 60% (United States Census, 2021)—but it is a greater overestimation in the global context—compared to less than 20% in 2021 (Population Reference Bureau, 2021). To address these gaps, researchers need to be more diligent about reporting the racial and ethnic makeup of their samples. Additionally, there needs to be a concentrated effort to validate ADHD knowledge measures for use within REM groups, particularly for use with Asian, Pacific Islander/Native Hawaiian, and Native American participants. Without this, an accurate understanding of ADHD knowledge trends across race and ethnicity is limited. Fortunately, a few measures— such as the unnamed measure by Awadalla et al. (2016) for Middle Eastern/North African participants, the KADDS for Latinx participants, and the unnamed measure by Bussing et al. (1998) for Black participants— have both strong psychometric quality and are appropriate for use with specific REM populations.

Limitations and Future Directions

This review highlights some of the shortcomings of psychometric reporting and population sampling within ADHD knowledge research. The authors recognize that the review is limited by the inclusion of only published sources, dissertations, and theses. As such, unpublished test manuals and related validation data were excluded. The inclusion of only published measures mirrors more closely that is readily available to researchers developing ADHD knowledge studies and practitioners searching for clinical tools. Additionally, the authors recognize that the decision to limit the review to publications in English or with English translations available may have further led to an underestimation of ADHD knowledge measures currently available internationally. Finally, this review did not employ any methods to control for potential publication bias other than the inclusion of theses and dissertations as a preventative measure. Since publication bias derives from the overrepresentation of positive findings in published literature (Dalton et al., 2016), ADHD knowledge measures created for studies with negative findings or measures without support may have been missed. Together, these three limitations may have resulted in an underrepresentation of available ADHD knowledge measures and a potential overestimation of their quality. While these are all limitations, one of the central conclusions of the review—that there is a vast number of measures available with limited psychometric support—would likely remain the same. Future research could include additional gray literature, seek publications not available in English, and employ quality control methods for publication bias.

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Table 1
Selected descriptive information regarding included articles

Study	Country	*N*	Population	Measure	Reported Reliability	Reported Validity
Abed (2014)	Saudi Arabia	54	General education teachers	Knowledge about Attention Deficit Disorder Questionnaire (KADD-Q; West et al., 2005)	--	--
Adamis (2019)	Ireland	140	Medical Doctors	Unnamed (Adamis et al., 2019)	--	--
Aguiar (2014)	Brazil	37	General education teachers	Unnamed (Aguiar et al 2014)	--	--
Akram (2009)	Scotland	68	General education teachers, preservice teachers	Unnamed (Akram, 2009)	--	Face, content
Al-Ahmari (2018)	Saudi Arabia	340	Medical doctors	Unnamed (Al-Ahmari et al 2018)	Internal consistency	Face, content
Alfageer (2018)	Saudi Arabia	141	General education teachers	Knowledge of Attention Deficit Disorders Scale (KADDS)	Internal consistency	--
Al-Moghamsi (2018)	Saudi Arabia	416	General education teachers, special education teachers, school staff	KADDS	--	--
Al-Omari (2015)	Jordan	130	General education teachers	Unnamed (Ghanizadeh & Zarei, 2010)	Test-retest	Face
Alkahtani (2013)	Saudi Arabia	429	General education teachers, special education teachers	KADDS	Internal consistency	--
Alshehri (2020)	Saudi Arabia	100	General education teachers	Unnamed (Awadalla et al., 2016)	Internal consistency	Content
Alsuhaibani (2020)	Saudi Arabia	224	Medical residents	Unnamed (Qashqari et al., 2017)	--	--
Anastopoulos (2015)	USA	43	People with ADHD	Test of ADHD Knowledge	--	--
Anderson (2012)	Australia	454	General education teachers, preservice teachers	Unnamed (Anderson et al 2012)	Internal consistency	--
Andrews (1994)	USA	46	Parents	ADHD, What Do You Know and What Can You Do?	Internal consistency	Content

Badeleh	Iran	245	General education teachers	Unnamed (Badeleh, 2013)	--	Content
Bai (2015)	China	89	Parents	Unnamed (Bai et al., 2015)	--	--
Barbaresi (1998)	USA	44	General education teachers	Unnamed (Barbaresi and Olsen, 1998)	--	--
Barnett (2017)	USA	60	General education teachers	KADDS	Internal consistency	Criterion
Baudinette (2010)	United Kingdom	225	Medical professionals	Unnamed (Baudinette, 2010)	--	Face
Beirne (2013)	Ireland	91	Psychiatrists	Survey on Adult ADHD	--	--
Bekle (2004)	Australia	70	General education teachers, preservice teachers	Unnamed (Bekle, 2004)	--	--
Bender (1996)	USA	56	Preservice teachers	KADDS	Internal consistency	Criterion, content
Bennett (1996)	USA	150	Parents	ADHD Knowledge and Opinion Scale-Revised (AKOS-R)	Internal consistency, test-retest	--
Blotnicky-Gallant (2015)	Canada	113	General education teachers	KADDS	Internal consistency	--
Bolinger (2020)	USA	17	General education teachers, special education teachers	Unnamed (Kos et al., 2004)	--	Face, content
Booksh (1995)	USA	110	College students	Unnamed (Booksh, 1995)	--	--
Booksh (2005)	USA	110	College students	Unnamed (Booksh, 2005)	--	--
Bradley-Klug (1997)	USA	169	General education teachers, school administrative staff, guidance counselors, school psychologists, school nurses, special education teachers	Unnamed (Anastopoulos et al., 1992)	--	--
Bradshaw (2013)	Qatar	233	General education teachers	KADDS	--	--
Bramham (2009)	Great Britain	61	People with ADHD	Unnamed (Bramham et al., 2009)	--	--
Brook (2000)	Israel	46	General education teachers	Unnamed (Brook et al, 2000)	--	Face
Brook (2001)	Israel	104	Peers	Unnamed (Brook & Geva, 2001)	--	Face, content

Bussing (1998)	USA	499	Parents	Unnamed (Bussing et al., 1998)	Internal consistency, test-retest	Criterion
Bussing (1998)	USA	127	Parents	Unnamed (Bussing et al., 1998)	Inter-rater, test-retest	Content
Bussing (2007)	USA	1615	Parents	Unnamed (Bussing et al. 1998)	Internal consistency, inter-rater, test-retest	--
Bussing (2012)	USA	374	People with ADHD, peers	Unnamed (Bussing et al., 1998)	--	--
Canu (2021)	USA	911	Preservice teachers, college students	Knowledge and Beliefs Questionnaire (Kos et al., 2004)	Internal consistency	Content
Capizzi (2018)	USA	179	General education teachers	Test of Knowledge About ADHD	Internal consistency	--
Carpenter (1995)	USA	8	People with ADHD	Unnamed (Carpenter, 1995)	--	--
Climie (2018)	Canada	29	People with ADHD, parents	KADDS, Children ADHD Knowledge and Opinions Scale (MacKay & Corkum, 2006)	--	--
Coles (2015)	USA	13	General education teacher	Unnamed (Mixon et al., 2014)	--	Criterion, content
Corkum (1999)	Canada	81	Parents	ADHD Knowledge and Opinion Scale (AKOS)	--	--
Cormier (2004)	USA	3	Parents	Test of ADHD Knowledge	Test-retest	--
Coronado (2013)	USA	353	General education teachers	Unnamed (Kos et al., 2004)	Internal consistency	Face, content
Currier (2004)	USA	48	Parents	AKOS-R	--	--
deOliveira (2018)	Brazil	241	College students	Unnamed (de Oliveira et al., 2018)	--	Content
Diaz (2015)	USA	43	Social workers	The ADHD Belief and Attitude Scale	--	--
Dielmann (2006)	USA	81	General education teachers	Questionnaire of Knowledge and Management Procedures (QKMP) (modified from Miranda, Presentacion, & Soriano, 2002)	Internal consistency	Face

Dilaimi (2013)	New Zealand	84	General education teachers, special education teachers	KADDS	Internal consistency, test-retest reliability	Criterion, content
Doak (2003)	USA	159	General education teachers	Unnamed (Jerome et al., 1994)	--	--
Doucet (2013)	USA	20	General education teachers	Unnamed (Doucet, 2012)	--	--
Egan (2019)	USA	230	General education teachers	KADDS	--	--
Eng (2007)	USA	47	General education teachers	Knowledge of ADHD Rating Evaluation (KARE).	Internal consistency, test-retest	--
Ervington (2013)	USA	52	General education teachers	KADDS	Internal consistency	--
Flood (2019)	Ireland	10	Parents	Unnamed (Flood et al., 2019)	--	--
Frankenberger (2001)	USA	258	School psychologists	Unnamed (Frankenberger et al, 2001)	--	Face
Frigerio (2014)	Italy	579	General education teachers	ADHD Knowledge Scale	--	Content
Fuller (2015)	USA	349	General education teachers, special education teachers	Knowledge of ADHD Rating Evaluation (KARE) (Vereb & DiPerna, 2004)	Internal consistency	Face, content
Garcia (2009)	USA	32	General education teachers	(Modified) Knowledge of Attention Deficit Disorders Scale (Garcia, 2009)	Internal consistency	--
Gerdes (2020)	58	USA	Parents	ADHD Knowledge Measure	--	--
Germayne (1994)	USA	91	General education teachers	Unnamed (Germayne, 1994)	--	Face
Ghanizadeh (2006)	Iran	196	General education teachers	Unnamed (Ghanizadeh et al., 2006)	Test-retest	Face
Ghanizadeh (2007)	Iran	119	Parents	Unnamed (Ghanizadeh et al., 2006)	--	--
Giannopoulou (2017)	Greece	143	General education teachers	ADHD Knowledge Questionnaire	Internal consistency	Convergent
Gilmore (2010)	Australia	645	Parents	Unnamed (Gilmore, 2010)	--	Content
Graczyk (2005)	USA	428	General education teacher, school psychologists, school social workers, school counselors	AKOS-R	Test-retest	Criterion

Graeper (2011)	USA	35	General education teachers, special education teachers, teaching assistants	KADDS	Internal consistency, test-retest	Criterion
Greenway (2020)	United Kingdom	322	General education teachers, paraprofessionals	ADHD-Specific Knowledge Scale	Internal consistency	Construct
Grynkewich (1996)	USA	115	Preservice teachers	Unnamed (Grynkewich, 1996)	Internal consistency	Face
Guerra (2012)	USA	107	General education teachers	KADDS	Internal consistency	Face, criterion, content
Guerra (2017)	USA	173	General education teachers	KADDS	Internal consistency, test-retest	Criterion, content
Harrison (2002)	Australia	100	Parents	Test of ADHD Knowledge	Internal consistency, test-retest	--
Hepp (2009)	Canada	169	General education teachers, preservice teachers	modified Knowledge of ADHD Scale (ADHD (Jerome et al., 1994), KADDS	Internal consistency	Face, convergent, discriminant
Hepperlen (2002)	USA	103	General education teachers	The Test of Knowledge About ADHD	Internal consistency	--
Herbert (2004)	USA	51	General education teachers, school psychologists, school counselors	KADDS	Internal consistency	Content
Hirvikoski (2017)	Sweden	179	People with ADHD, significant others of people with ADHD	Unnamed (Hirvikoski et al., 2017)	--	--
Hofer (2010)	USA	79	Graduate students, psychologists, school psychologists, medical doctors, other medical professionals	KADDS	Internal consistency	Criterion
Jawaid (2006)	Pakistan	194	Medical doctors	Unnamed (Jawaid et al, 2008)	--	Face
Jerome (1994)	USA, Canada	439	General education teachers	Unnamed (Gordon et al., 1991)	--	--

Jimoh (2014)	Nigeria	250	General education teachers	Unnamed (Jimoh, 2014)	Test-retest	--
Johnston (2011)	Canada	100	Parents	Unnnamed (Johnston et al., 2011)	Interrater	--
Jones (2008)	USA	142	General education teachers	Unnamed (Jones & Chronis-Tuscano, 2008)	Internal consistency	Content
Kalafut (2012)	USA	54	General education teachers, medical doctors, special education teachers	Assessments of ADHD Diagnostics and Imitators Scale	Internal consistency	Face, content
Kaufman (2004)	USA	44	Parents	Attention Deficit Hyperactivity Disorder Knowledge and Opinion Survey - III (AKOS-III, Bennett et al., 1996).	Internal consistency, test-retest	--
Khademi (2016)	Iran	205	General education teachers	Unnamed (Khademi et al, 2016)	Internal consistency, test-retest	Face
Kikas (2016)	Estonia	186	Preservice teachers	Unnamed (Kikas et al., 2016)	--	--
Klein (2001)	USA	60	General education teachers	AKOS	Test-retest	--
Kleynhans (2005)	South Africa	552	General education teachers	Knowledge of Attention Deficit Disorders Scale (modified by Kleynhans, 2005)	Internal consistency	Face, content
Kowalczyk (2013)	USa	115	General population	Unnamed (Kowalczyk, 2013)	--	--
Krowski (2009)	USA	119	General education teachers, special education teachers	KADDS	Internal consistency, test-retest	Face, content
Lasisi (2017)	Nigeria	84	General education teachers	Self-Report ADHD Questionnaire	Internal consistency	--
LaTouche (2019)	Australia	274	General education teachers, special education teachers	KADDS	Internal consistency	Criterion
Lee (2014)	USA, South Korea	379	General education teachers	KADDS	Internal consistency, test-retest	Convergent, criterion
Lee (2015)	Germany	235	Preservice teachers	Modified Kos (2004)	Internal consistency	--

Lee (2015)a	Hong Kong	50	General education teachers	KADDS	Internal consistency	--
Liang (2016)	Hong Kong	99	General education teachers, preservice teachers	Unnamed (Liang et al, 2016)	--	--
Liesveld (2007)	USA	133	General education teachers, special education teachers	KADDS	Internal Consistency, test-retest	Face, convergent, criterion, construct
Losapio (2010)	USA	206	Parents	KADDS	Internal consistency, test retest	--
Macey (2005)	USA	73	General education teachers	Unnamed (Macey, 2005)	Internal consistency	Content
MacKay (2006)	Canada	25	People with ADHD	Children's ADHD Knowledge & Opinions Questionnaire	--	--
Massey-Harvell (2017)	USA	33	General education teachers, special education teachers	Unnamed (Massey-Harvell, 2017)	--	Face
Merritt (2017)	USA	123	General education teachers	KADDS	--	--
Mohr-Jensen (2019)	Denmark	528	General education teachers, special education teachers	Unnamed (Mohr-Jenson et al., 2019)	Internal consistency	Face, content
Montoya (2013)	Spain	51	Parents, psychiatrists, other medical professionals	ADHD-Knowledge and Motivation for Treatment	--	--
Mukherjee (2016)	India	120	People with ADHD, children with SLD	Unnamed (Mukherjee, 2016)	Test-retest	Content
Mulholland (2015)	Australia	116	General education teachers	Unnamed (Mulholland, 2015)	--	--
Munshi (2014)	Saudi Arabia	130	General education teachers	Unnamed (Munshi, 2014)	--	Face
Naseqicz (2009)	USA	100	Preservice teachers	KADDS	Internal consistency, test retest	--
Niznik (2004)	USA	47	General education teachers	Educator ADHD Knowledge Form	Internal consistency	--
Nowaiser (2017)	Saudi Arabia	190	Dentists	Unnamed (Nowaiser, 2017)	--	Face

O'Connor (2000)	USA	4	Parents	Unnnamed (Andrews, 1995)	--	--
Odum (1996)	USA	20	Parents	AKOS	--	--
Ohan (2008)	Australia	140	General education teachers	ADHD Knowledge Scale	--	--
Oim (2004)	Norway, Estonia	376	General education teachers	Unnamed (Oim, 2004)	Internal consistency	Content
Okionuka (2016)	Nigeria	975	General education teachers	KADDS	Internal consistency, test retest	Content
Padilla (2018)	Columbia	62	General education teachers	KADDS, Spanish edition	--	--
Pentecost (2002)	Great Britain	174	Social workers	Unnamed (Pentecost & Wood, 2004)	--	--
Perold (2010)	South Africa	552	General education teachers	KADDS	Internal Consistency	Content
Persaud (2019)	USA	10	Parents	Unnamed (Persaud, 2019)	--	--
Piccolo-Torsky (1998)	USA	154	General education teachers	Unnamed (Jerome, Gordon, and Hustler 1994)	--	Content
Pindiprolu (2014)	USA	76	Preservice teachers, school psychologists in training, speech and language pathologists	Unnamed (Snider et al., 2003)	--	--
Power (1995)	USA	147	General education teachers	ADHD Knowledge Scale	--	--
Poznanski (2018)	USA	107	Preservice teachers	Knowledge and Opinions of ADHD (KOAD)	Internal consistency	Construct, content
Poznanski (2020)	USA	107	General education teachers	KOAD	Internal consistency	--
Qashqari (2017)	Saudi Arabia	111	Medical doctors in training, other medical professionals in training	Unnamed (Qashqari et al 2017)	--	--
Ramos (2009)	USA	133	General education teachers	KADDS	Internal consistency	--
Rodrigo (2011)	Sri Lanka	202	General education teachers	Unnamed (Rodrigo et al., 2011)	--	Face
Rostain (1993)	USA	116	Parents	AKOS	Internal consistency	Face, construct
Safaan (2017)	Egypt	500	General education teachers	KADDS	Test-retest	Face, content

Sarraf (2011)	Iran	67	General education teachers	Unnamed (Azhar & Safari, 2010)	Internal consistency	Face
Schachter (2011)	Canada	122	People with ADHD, parents, peers	Measure of Understanding	Internal consistency	Face
Sciutto (2000)	USA	149	General education teachers	KADDS	Internal consistency	Content
Sciutto (2015)	USA	196	College students, general population	Strength of Beliefs in ADHD Knowledge Scale	Internal consistency	Content
Sciutto (2016)	Czech Republic, Germany, Greece, Iraq, the Republic of Korea, Saudi Arabia, South Africa, USA, Vietnam	2307	General education teachers, special education teachers	KADDS	Internal consistency, test-retest	Criterion
Seabi (2010)	South Africa	5	General education teachers	Unnamed (Seabi, 2010)	--	Face
Shahwan (2020)	United Arab Emirates	137	Dentists	Unnamed (Shahwan et al., 2020)	--	--
Shapiro (1996)	USA	169	General education teachers, school administrative staff, school psychologists, other medical professionals, special education teachers	ADHD Knowledge Test	--	--
Shetty (2014)	India	312	General education teachers	Unnamed (Shetty et al., 2014)	--	Content
Shroff (2017)	India	106	General education teachers	KADDS	Internal consistency	--
Small (2003)	USA	72	General education teachers	KADDS	Internal consistency	--
Snider (2003)	USA	45	Special education teachers, general education teachers	Unnamed (Snider et al., 2003)	--	--
Soroa (2014)	Spain	752	General education teachers	Questionnaire to Assess Teachers' Knowledge of ADHD	Internal consistency, test retest	Convergent, construct

Soroa (2012)	Spain	182	General education teachers, psychologists, psychiatrists, medical doctors, professors	Unnamed (Soroa et al 2012)	--	Content
Soroa (2014)	Spain	166	General education teachers, special education teachers	Unnamed (Soroa et al., 2014)	Internal consistency	Content
Soroa (2016)	Spain	1278	General education teachers	Questionnaire to assess teacher's knowledge of ADHD	Internal consistency, test retest	Convergent
Stampoltzis (2013)	Greece	234	General education teachers, special education teachers	The ADHD Knowledge Based Questionnaire (McNicholas & Santosh, 1997)	Internal consistency	--
Steiner (2014)	USA	172	Siblings	Jerome ADHD Knowledge Questionnaire	--	Criterion
Stormont (2005)	USA	138	General education teachers	The Preschool ADHD Questionnaire	Internal consistency	Criterion, content
Stroh (2008)	USA	146	Parents	Unnamed (Stroh et al., 2008)	--	Content
Syed	Pakistan	49	General education teachers	Unnamed (Syed & Hussein, 2010)	--	--
Taylor (2018)	Canada	29	People with ADHD	AKOS	Internal consistency	--
Taylor (2020)	Canada	29	Parents	AKOS	Internal consistency	--
Topkin (2015)	South Africa	200	General education teachers	KADDS	Internal consistency	--
Toye (2019)	Scotland	135	General education teachers, school administration, school psychologists	KADDS	Internal consistency	--
Venter (2004)	South Africa	423	Psychiatrists, medical Doctors	Unnamed (Venter et al., 2004)	--	Content
Vereb (2004)	USA	47	General education teachers, special education teachers	Knowledge of ADHD Rating Evaluation	Internal consistency, test-retest	Content
Ward (2014)	Ireland	90	General education teachers	KADDS	Internal consistency, test-retest	Criterion

Weyandt (2009)	USA	132	General education teachers, school psychologists, special education teachers	ADHD Beliefs Scale	Internal consistency	Construct
Webb (2017)	USA	54	General education teachers, preservice teachers	Unnamed (Kos et al, 2004)	Internal consistency	Face
West (2005)	Australia	348	Parents, general education teachers	KADD-Q	Internal consistency	--
White (2011)	USA	134	General education teachers, special education teachers	Unnamed (White et al., 2011)	--	--
Zima (2013)	USA	529	People with ADHD	AKOS	--	--

Table 2
Selected descriptive information for studied populations regarding included articles

Study	Country	*N*	Population	Age Statistics	% Female	Racial and Ethnic Representation	Study Purpose	Measure
Abed (2014)	Saudi Arabia	54	General education teachers	N/A	48.1%	--	Examine teachers' knowledge of ADHD	Knowledge about Attention Deficit Disorder Questionnaire (KADD-Q; West et al., 2005)
Adamis et al. (2019)	Ireland	140	Medical Doctors	25-66+ years	40.4%	--	Examine general practitioners' attitudes and knowledge of ADHD	Unnamed (Adamis et al., 2019)
Aguiar et al. (2014)	Brazil	37	General education teachers	26-61 years	100%	--	Examine teacher knowledge of ADHD and LD	Unnamed (Aguiar et al 2014)
Akram (2009)	Scotland	68	General education teachers, preservice teachers	--	86.8%	--	Compare ADHD knowledge across teachers and preservice teachers	Unnamed (Akram, 2009)
Al-Ahmari (2018)	Saudi Arabia	340	Medical doctors	<30 – 40+ years	39.7%	--	Examine medical doctor knowledge of ADHD and related factors	Unnamed (Al-Ahmari et al 2018)
Alfageer (2018)	Saudi Arabia	141	General education teachers	26-55 years	--	--	Examine teacher ADHD knowledge	Knowledge of Attention Deficit Disorders Scale (KADDS), Arabic Version
Al-Moghamsi (2018)	Saudi Arabia	416	General education teachers, special education teachers, school staff	22-66 years	48.3%	--	Examine teacher knowledge of ADHD and predicting factors	KADDS, Arabic Version

Al-Omari (2015)	Jordan	130	General education teachers	18-60 years	94.6%	--	Examine teachers' knowledge and attitudes toward ADHD	Unnamed (Ghanizadeh et al., 2006)
Alkahtani (2013)	Saudi Arabia	429	General education teachers, special education teachers	23-59 years	55.5%	--	Examine teachers' knowledge of ADHD	KADDS, Arabic Version
Alshehri (2020)	Saudi Arabia	100	General education teachers	--	0%	81% Middle Eastern or North African	Assess the effectiveness of an ADHD knowledge program	Unnamed (Awadalla et al., 2016)
Alsuhaibani (2020)	Saudi Arabia	224	Medical residents	21-28 years	41.1%	--	Examine ADHD knowledge in medical students	Unnamed (Qashqari et al., 2017)
Anastopoulos (2015)	USA	43	People with ADHD	17-27 years	62.8%	63% White, 16% Latinx, 21% Other	Evaluate an intervention to increase ADHD student retention	Test of ADHD Knowledge
Anderson (2012)	Australia	454	General education teachers, preservice teachers	18 - 61 years	79.3%	--	Examine teacher ADHD knowledge and attitudes	Unnamed (Anderson et al 2012)
Andrews (1994)	USA	46	Parents	--	54.3%	--	Assess the effectiveness of an informational video about ADHD	ADHD, What Do You Know and What Can You Do?
Badeleh (2013)	Iran	245	General education teachers	--	75.5%	--	Examine teacher ADHD knowledge	Unnamed (Badeleh, 2013)
Bai (2015)	China	89	Parents	$M = 40$ years	73%	--	Assess effectiveness of an ADHD psychoeducation program	Unnamed (Bai et al., 2015)

Barbaresi & Olsen (1998)	USA	44	General education teachers	*M* = 42	75%	--	Assess effectiveness of an inservice on increasing ADHD knowledge and decreasing teacher stress	Unnamed (Barbaresi and Olsen, 1998)
Barnett (2017)	USA	60	General education teachers	21 – 55+ years	50%	85% Black, 15% White	Examine differences in teacher knowledge of ADHD by gender and ethnicity	KADDS
Baudinette (2010)	United Kingdom	225	Occupational therapists	--	96%	--	Examine occupational therapists' knowledge of ADHD	Unnamed (Baudinette, 2010)
Beirne (2013)	Ireland	91	Psychiatrists	--	--	--	Examine psychiatrists' knowledge of ADHD and available interventions	Survey on Adult ADHD
Bekle (2004)	Australia	70	General education teachers, preservice teachers	20 –60+ years	78.6%	--	Compare ADHD knowledge between teachers and preservice teachers	Unnamed (Bekle, 2004)
Bender (1996)	USA	56	Preservice teachers	19-44 years	95%	--	Assess the effectiveness of an ADHD knowledge program	KADDS
Bennett (1996)	USA	150	Parents	--	58%	--	Evaluated the relationship between treatment adherence and predictive variables	ADHD Knowledge and Opinion Scale-Revised (AKOS-R)

Berri (2016)	Lebanon	301	General education teachers	--	100%	--	Examine teacher knowledge of ADHD	KADDS
Blotnicky-Gallant (2015)	Canada	113	General education teachers	24-58 years	87.6%	--	Evaluate the relationship between teacher ADHD knowledge, beliefs, and classroom practices	KADDS
Bolinger (2020)	USA	17	General education teachers, special education teachers	21-56 years	94.1%	88.2% White, 5.9% Latinx, 5.9% Other	Examine teacher knowledge of ADHD and relationship to classroom management	Knowledge and Beliefs Questionnaire
Booksh (2005)	USA	110	College students	18-31 years	80%	79% White, 18% Black, 2% Native American, 1% Prefer Not to Respond	Assess college student ability to simulate ADHD symptoms and relationship to ADHD knowledge	Unnamed (Booksh, 2005)
Bradley-Klug (1997)	USA	169	General education teachers, school administrative staff, guidance counselors, school psychologists, school nurses, special education teachers	--	--	--	Evaluate a psychoeducational intervention for ADHD in schools	Test of ADHD Knowledge (Anastopoulos et al., 1992)
Bradshaw & Kamal (2013)	Qatar	233	General education teachers	--	--	70.9% Middle Eastern or North African	Examine teacher ADHD knowledge	Unnamed (Bradshaw & Kamal, 2013)
Bramham (2009)	Great Britain	61	People with ADHD	*M* = 32.95 years	34.4%	100% White	Evaluate the effectiveness of a CBT intervention for ADHD	Unnamed (Bramham et al., 2009)

Brook (2000)	Israel	46	General education teachers	*M* = 40.2 years	86.7%	--	Examine teacher knowledge and attitudes toward ADHD	Unnamed (Brook et al, 2000)
Brook and Geva (2001)	Israel	104	Peers	14 – 18 years	50%	--	Examine peer knowledge of ADHD and learning disorders	Unnamed (Brook & Geva, 2001)
Bussing (1998a)	USA	499	Parents	--	83%	46% Black	Compare White and Black parent ADHD knowledge and information sources	Unnamed (Bussing et al., 1998)
Bussing (1998b)	USA	127	Parents	--	--	--	Examine parent knowledge of ADHD	Unnamed (Bussing et al., 1998)
Bussing (2007)	USA	1615	Parents	--	--	41% Black	Examine cultural differences in ADHD knowledge, beliefs, and information sources	Unnamed (Bussing et al. 1998)
Bussing (2012)	USA	374	People with ADHD, Parents, Peers	*M* = 15.4, *SD* = 1.8 years	57%	36% Black	Examine parent and adolescent knowledge, attitudes, and information sources for ADHD and related factors	Unnamed (Bussing et al., 1998)
Canu (2021)	USA	911	Preservice teachers, college students	Teacher Trainees: *M* = 24.8, *SD* = 5.96, Students: *M* = 19.7, *SD* = 3.65	77.2%	1.5% Asian, 2.4% Black, 1.5% Latinx, 0.1% Native American, 94.6% White, 0.3% Other	Compare preservice teachers to other college students on ADHD knowledge	Knowledge and Beliefs Questionnaire
Capizzi (2018)	USA	179	General education teachers	--	92.7%	--	Examine teacher knowledge of ADHD and related factors	Test of Knowledge About ADHD

Carpenter (1995)	USA	8	People with ADHD	--	--	--	Assess the effectiveness of a psychoeducational program for students with ADHD	Unnamed (Carpenter, 1995)
Climie (2018)	Canada	29	Children with ADHD, parents	Children: 8-12 years	Children: 37.9%, Parents: 93.1%	79.3% White	Examine parent ADHD knowledge	KADDS, Children ADHD Knowledge and Opinions Scale (MacKay & Corkum, 2006)
Coles (2015)	USA	13	General education teacher	--	--	--	Develop a consultation package to improve teacher knowledge and skills	Unnamed (Mixon et al., 2014)
Corkum (1999)	Canada	81	Parents	*M* = 37, *SD* = 5.6	100%	--	Evaluate relationship between parent ADHD knowledge, treatment enrollment, and adherence	ADHD Knowledge and Opinion Scale (AKOS)
Cormier (2004)	USA	3	Parents	--	100%	--	Assess the effectiveness of in-home parent training for parents of children with ADHD	Test of ADHD Knowledge (Anastopoulos et al., 1992)
Coronado (2013)	USA	353	General education teachers	--	--	--	Examine teacher knowledge and attitudes of ADHD	Knowledge and Beliefs Questionnaire
Currier (2004)	USA	48	Parents	20-60 years	100%	87.5% Black, 2.1% Native American, 8.3% Latinx, 2.1% Prefer Not to Respond	Assess the effectiveness of an ADHD knowledge intervention	Modified AKOS-R (Currier, 2004)

deOliveira (2018)	Brazil	241	College students	18-64 years	79.7%	--	Assess the effectiveness of an online psychoeducational resource	Unnamed (de Oliveira et al., 2018)
Diaz (2015)	USA	43	Social workers	--	90.1%	White (51.1%), Latinx (39.6%), Black (9.3%)	Examine school social workers' knowledge of ADHD	The ADHD Belief and Attitude Scale
Dielmann (2006)	USA	81	General education teachers	--	95.1%	92.7% White, 4.9% Black, 1.2% Asian, 1.2% Native American	Assess the effectiveness of an inservice training	Questionnaire of Knowledge and Management Procedures (QKMP)
Dilaimi (2013)	New Zealand	84	General education teachers, special education teachers	>30-60+ years	85.7%	--	Examine teacher knowledge and attitudes of ADHD and predictive factors	KADDS
Doak (2003)	USA	159	General education teachers	25-64 years	92.5%	--	Examine teacher ADHD knowledge and predictive factors	Unnamed (Jerome et al., 1994)
Doucet (2013)	USA	20	Parents	--	--	--	Explore decision-making process in families with ADHD and related factors	Unnamed (Doucet, 2012)
Egan (2019)	USA	230	General education teachers	21-68 years	89.6%	74.3% White, 3.9% Native American, 6.1% Asian, 3.5% Multiracial, 12.2% Black	Evaluate teacher intervention preferences for ADHD and related factors	KADDS
Eng (2007)	USA	47	General education teachers	--	85%	85% White, 11% Black, 4% Asian	Assess the effectiveness of psychoeducation for teachers	Knowledge of ADHD Rating Evaluation (KARE)

Ervington (2013)	USA	52	General education teachers	22-70 years, *M* = 32.6	88.5%	--	Assess potential factors related to ADHD recommendation adherence	KADDS
Flood et al. (2019)	Ireland	10	Parents	--	90%	--	Explore parent experiences with ADHD medication	Unnamed (Flood et al., 2019)
Frankenberger et al. (2001)	USA	258	School psychologists	--	61.1%	--	Examine school psychologists' knowledge and attitudes of ADHD	Unnamed (Frankenberger et al, 2001)
Frigerio (2014)	Italy	579	General education teachers	24-63 years	96%	--	Examine teacher ADHD knowledge	ADHD Knowledge Scale
Fuller (2015)	USA	349	General education teachers, special education teachers	--	--	--	Evaluate relationship between teacher ADHD knowledge and perceived effectiveness	KARE
Garcia (2009)	USA	32	General education teachers	--	56.3%	61.5% White, 21.9% Latinx, 6.3% Black, 3.1% Asian or Pacific Islander	Examine teacher knowledge of ADHD and support for related interventions	(Modified) Knowledge of Attention Deficit Disorders Scale (Garcia, 2009)
Gerdes (2020)	58	USA	Parents	Mothers: *M* = 35, *SD* = 5.1, Fathers: *M* = 38.9, *SD* = 9.7 years	49.1%	100% Latinx	Assess the effect of psychosocial treatment on improving parent knowledge of ADHD	ADHD Knowledge Measure
Germayne (1994)	USA	91	General education teachers	--	76%	--	Assess effect of information distribution on teacher knowledge of ADHD	Unnamed (Germayne, 1994)
Ghanizadeh et al. (2006)	Iran	196	General education teachers	*M* = 39.8 years	55.1%	--	Examine teacher knowledge of ADHD	Unnamed (Ghanizadeh et al., 2006)

Ghanizadeh (2007)	Iran	119	Parents	*M* = 32.6, *SD* = 6.3	>73%	--	Examine parent ADHD knowledge and relationship to service utilization	Unnamed (Ghanizadeh et al., 2006)
Giannopoulou (2017)	Greece	143	General education teachers	22-41+ years	85.3%	--	Develop and assess an ADHD informational seminar for teachers	ADHD Knowledge Questionnaire
Gilmore (2010)	Australia	645	Parents	20-60+ years	51.5%	--	Examine ADHD knowledge and attitudes in parents	Unnamed (Gilmore, 2010)
Graczyk (2005)	USA	428	General education teacher, school psychologists, school social workers, school counselors	--	84.6%	49% White, 35% Black, 12% Latinx, 2% Asian, 0.7% Native American, 0.72% Other	Evaluate school staff opinions toward ADHD interventions and related factors	AKOS-R
Graeper (2011)	USA	35	General education teachers, special education teachers, teaching assistants	22-60+ years	91.4%	--	Assess the effectiveness of an ADHD inservice	KADDS
Greenway (2020)	United Kingdom	322	General education teachers, paraprofessionals	18-62 years	78%	--	Compare ADHD training across teachers and paraprofessionals	ADHD-Specific Knowledge Scale
Grynkewich (1996)	USA	115	Preservice teachers	18-31+ years	68%	--	Examine preservice teachers' ADHD knowledge and attitudes	Unnamed (Grynkewich, 1996)
Guerra (2012)	USA	107	General education teachers	--	--	--	Examine teacher knowledge of ADHD	KADDS

Guerra (2017)	USA	173	General education teachers	--	--	--	Examine teacher knowledge of ADHD	KADDS
Harrison (2002)	Australia	100	Parents	25-53 years	100%	--	Evaluate parent distress and related factors	Test of ADHD Knowledge (Anastopoulos et al., 1992)
Hepp (2009)	Canada	169	General education teachers, preservice teachers	20-60 years	81.1%	--	Examine teacher and preservice teacher ADHD knowledge	Unnamed (Jerome et al., 1994), KADDS
Hepperlen (2002)	USA	103	General education teachers	*M* = 39.4, *SD* = 9.1 years	81.6%	91.3% White, 8.7% Prefer Not to Respond	Develop an ADHD knowledge measure	The Test of Knowledge About ADHD
Herbert (2004)	USA	51	General education teachers, school psychologists, school counselors	--	70.6%	--	Compare school professional knowledge of ADHD to other disorder	KADDS
Hirvikoski (2017)	Sweden	179	People with ADHD, significant others of people with ADHD	19-67 years	62.0%	--	Assess the effectiveness of a group psychoeducational intervention	Unnamed (Hirvikoski et al., 2017)
Hofer (2010)	USA	79	Graduate students, psychologists, school psychologists, medical doctors, other medical professionals	--	72.2%	--	Examine self-perceived and actual knowledge of ADHD	KADDS
Jawaid (2006)	Pakistan	194	Medical doctors	--	46.4%	--	Evaluate the relationship between ADHD knowledge and screening ability	Unnamed (Jawaid et al, 2008)

Jerome (1994)	USA, Canada	439	General education teachers	--	86%	--	Compare American and Canadian teachers' knowledge of ADHD	Unnamed (Jerome et al., 1994)
Jimoh (2014)	Nigeria	250	General education teachers	20-60 years	50%	--	Examine teacher knowledge and attitudes toward ADHD	Unnamed (Jimoh, 2014)
Johnston (2011)	Canada	100	Parents	Intervention: M = 40.6, SD = 5.8, Control: M = 38.7, SD = 6.1 years	100%	55% White, 29% Asian, 16% Other	Assess the effectiveness of instructional materials in parent accuracy on rating forms	Unnnamed (Johnston et al., 2011)
Jones & Chronis-Tuscano (2008)	USA	142	General education teachers	M = 37.1, SD = 12.5 years	92%	57% White, 33% Black, 4% Latinx, 6% Other	Assess efficacy of inservice about ADHD	Unnamed (Jones & Chronis-Tuscano, 2008)
Kalafut (2012)	USA	54	General education teachers, medical doctors, special education teachers	--	81.5%	--	Examine teachers' and medical professionals' ADHD knowledge	Assessments of ADHD Diagnostics and Imitators Scale
Kaufman (2004)	USA	44	Parents	--	79.5%	61.0% White, 24.4% Black, 14.6% Latinx	Evaluate predictive factors of parent satisfaction	Attention Deficit Hyperactivity Disorder Knowledge and Opinion Survey - III (AKOS-III, Bennett et al., 1996).
Khademi (2016)	Iran	205	General education teachers	--	86.8%	--	Examine teacher knowledge of ADHD and SLD	Unnamed (Khademi et al, 2016)
Kikas (2016)	Estonia	186	Preservice teachers	22-52 years	83.3%	--	Examine preservice teacher knowledge of	Unnamed (Kikas et al., 2016)

Klein (2001)	USA	60	General education teachers	*M* = 44, *SD* = 11 years	90%	97% White, 1.5% Black, 1.5% Latinx	ADHD and related factors Evaluate relationship between teacher ADHD knowledge and stress	AKOS
Kleynhans (2005)	South Africa	552	General education teachers	*M* = 42.2, *SD* = 8.6	79%	--	Examine teacher knowledge of ADHD	Knowledge of Attention Deficit Disorders Scale (modified by Kleynhans, 2005)
Kos	Australia	165	General education teachers, preservice teachers	Inservice: *M* = 15.2, *SD* = 8.8, Preservice: *M* = 23.6, *SD* = 5.6 years	82.4%	--	Examine teacher knowledge of ADHD and relationship to variables	Knowledge and Beliefs Questionnaire
Kowalczyk (2013)	USA	115	Adolescents and adults in general population	11-70 years	--	--	Evaluate whether people categorized specific information about ADHD as fact or belief	Unnamed (Kowalczyk, 2013)
Krowski (2009)	USA	119	General education teachers, special education teachers	20-50+ years	92.4%	--	Evaluate relationships between ADHD intervention use, ADHD knowledge, and other factors	KADDS
Lasisi (2017)	Nigeria	159	General education teachers	*M* = 42.5, *SD* = 8.0 years	89.9%	--	Assess the effectiveness of an ADHD training program	Self-Report ADHD Questionnaire
LaTouche (2019)	Australia	274	General education teachers, special education teachers	Intervention: *M* = 39.9, *SD* = 11.1, Control: *M*	85.8%	--	Assess the effectiveness of an inservice in increasing ADHD knowledge	KADDS

				= 43.6, *SD* = 11.8 years				
Lee (2014)	USA, South Korea	379	General education teachers	21-65 years	71.2%	--	Evaluate predictive factors in teachers' intention to refer for services	KADDS
Lee (2015a)	Germany	235	Preservice teachers	18-39 years	88.3%	--	Examine ADHD knowledge and related factors in preservice teachers	Modified Kos (2004)
Lee (2015b)	Hong Kong	50	General education teachers	26-57 years	82%	--	Examine teacher knowledge of ADHD	KADDS
Liang et al. (2016)	Hong Kong	99	General education teachers, preservice teachers	--	67.7%	--	Examine teacher knowledge and attitudes toward ADHD	Unnamed (Liang et al, 2016)
Liesveld (2007)	USA	133	General education teachers, special education teachers	--	80%	80% White, 8% Native American, 7% Latinx, 2% Asian, 1% Black, 2% Prefer Not to Repond	Examine teacher ADHD knowledge and attitudes	KADDS
Losapio (2010)	USA	206	Parents	24-60 years	79%	73.4% White, 8.4% Black, 7.5% Latinx, 5.2% Asian, .5% Native American	Evaluate parent acceptance of ADHD interventions and related factors	KADDS
Macey (2005)	USA	73	General education teachers	*M* = 39.5, *SD* = 11.2 years	98.6%	80.8% White, 13.7% Latinx, 2.7% Black, 2.7% Other	Examine teacher knowledge of ADHD and relationship to related factors	Unnamed (Macey, 2005)
MacKay (2006)	Canada	25	People with ADHD	8-12 years	20%	--	Assess effectiveness of a workshop in increasing ADHD knowledge	Children's ADHD Knowledge & Opinions Questionnaire

Massey-Harvell (2017)	USA	33	General education teachers, special education teachers	21-30+ years	94%	--	Examine teacher knowledge and attitudes of ADHD	Unnamed (Massey-Harvell, 2017)
Merritt (2017)	USA	123	General education teachers	--	--	--	Evaluate teacher self-efficacy and related factors	KADDS
Mohr-Jensen et al. (2019)	Denmark	528	General education teachers, special education teachers	<29-60+ years	76.1%	--	Examine teacher ADHD knowledge and predictive factors	Unnamed (Mohr-Jenson et al., 2019)
Montoya (2013)	Spain	51	Parents, psychiatrists, child neurologists, pediatricians	30-50+ years	70%	--	Evaluate quality of ADHD information online	ADHD-Knowledge and Motivation for Treatment
Mukherjee (2016)	India	120	Children with ADHD, children with SLD	8-14 years	17.5%	--	Examine children's ADHD knowledge and attitudes	Unnamed (Mukherjee, 2016)
Mulholland (2015)	Australia	116	General education teachers	23-70 years	--	84% White, 25% Other	Examine teacher ADHD knowledge and attitudes	Unnamed (Mulholland, 2015)
Munshi (2014)	Saudi Arabia	130	General education teachers	<25-35+ years	--	--	Examine teacher ADHD knowledge and related factors	Unnamed (Munshi, 2014)
Nasewicz (2009)	USA	100	Preservice teachers	19-49 years	95%	83% White, 7% Black, 4% Latinx, 3% Asian, 3% Multiracial, 1% Other	Examine preservice teacher recognition of seizures and relationship to ADHD knowledge	KADDS
Niznik (2004)	USA	47	General education teachers	21-50+ years	92%	--	Assess the effectiveness of an inservice	Educator ADHD Knowledge Form
Nowaiser (2017)	Saudi Arabia	190	Dentists	--	57.9%	--	Examine dentist knowledge of ADHD	Unnamed (Nowaiser, 2017)

O'Connor (2000)	USA	4	Parents	--	--	--	Assess effectiveness of ADHD behavioral interventions and related factors	Unnnamed (Andrews, 1995)
Odum (1996)	USA	20	Parents	--	100%	--	Assess the effectiveness of a psychoeducational intervention on increasing parent knowledge of ADHD	AKOS
Ohan (2008)	Australia	140	General education teachers	*M* = 42.3, *SD* = 9.87 years	85%	62.9% White, 1% Asian, 0.7% Indigenous	Examine teacher knowledge of ADHD and relationship to other factors	ADHD Knowledge Scale
Oim (2004)	Norway, Estonia	376	General education teachers	--	--	--	Examine and compare Norwegian and Estonian teacher knowledge of ADHD	Unnamed (Oim, 2004)
Ojionuka (2016)	Nigeria	975	General education teachers	--	69%	--	Evaluate the relationship between teacher knowledge of ADHD and use of behavioral intervention	KADDS
Padilla (2018)	Columbia	62	General education teachers	*M* = 45.9, *SD* = 7.6 years	98.4%	--	Examine teacher ADHD knowledge	KADDS, Spanish Edition
Pentecost (2002)	Great Britain	174	Social workers	--	75%	--	Examine social worker ADHD knowledge and attitudes	Unnamed (Pentecost, 2002)
Perold (2010)	South Africa	552	General education teachers	*M* = 41.19, *SD* = 8.61 years	79%	--	Examine teacher ADHD knowledge	KADDS

Persaud (2019)	USA	10	Parents	35 – 52 years	70%	100% Latinx	Examine Portuguese-American parents' knowledge of ADHD	Unnamed (Persaud, 2019)
Piccolo-Torsky (1998)	USA	154	General education teachers	20-40+ years	88%	--	Examine teacher ADHD knowledge	Unnamed (Jerome, Gordon, and Hustler 1994)
Pindiprolu (2014)	USA	76	Preservice teachers, school psychologists in training, speech and language pathologists	--	--	--	Examine ADHD knowledge in preservice teachers and other graduate students	Unnamed (Snider et al., 2003)
Power (1995)	USA	147	General education teachers	--	--	--	Evaluate acceptability of ADHD interventions and predictive factors	ADHD Knowledge Scale
Poznanski (2018)	USA	107	Preservice teachers	--	95.3%	80.4% White, 8.4% Black, 1.9% Asian, 9.8% Other	Examine preservice teacher knowledge of ADHD and classroom management	Knowledge and Opinions of ADHD (KOAD)
Poznanski (2020)	USA	107	General education teachers	--	97.2%	59.2% Latinx, 16.8% Black	Examine teacher ADHD knowledge and relationship to student perceptions	KOAD
Qashqari (2017)	Saudi Arabia	111	Medical students	20-29 years	69%	--	Examine medical student knowledge of ADHD and related factors	Unnamed (Qashqari et al 2017)
Ramos (2009)	USA	133	General education teachers	21-67 years	84.2%	89% Latinx, 11% White	Evaluate relationship between teacher knowledge of ADHD and self-efficacy	KADDS

Rodrigo et al. (2011)	Sri Lanka	202	General education teachers	*M* = 44 years, *SD* = 9.1	--	--	Examine teacher ADHD knowledge	Unnamed (Rodrigo et al., 2011)
Rostain (1993)	USA	116	Parents	--	57.1%	--	Evaluate parent willingness to pursue ADHD intervention and related factors	AKOS
Safaan (2017)	Egypt	500	General education teachers	24 – 58 years	62.4%	--	Examine teacher knowledge of ADHD	KADDS
Sarraf (2011)	Iran	67	General education teachers	25-55 years	--	--	Compare two intervention conditions for effectiveness in increasing ADHD knowledge	Unnamed (Azhar & Safari, 2010)
Schachter (2011)	Canada	122	People with ADHD, parents, adolescents	--	33.6%	--	Compare adolescent, parent, and client understanding of ADHD and informed consent	Measure of Understanding
Sciutto (2000)	USA	149	General education teachers	*M* = 40.8, *SD* = 11.4	89.9%	--	Examine teacher ADHD knowledge	KADDS
Sciutto (2015)	USA	196	College students, general population	*M* = 25.97, *SD* = 10.52 years	75%	85% White, 4% Black	Evaluate the influence of ADHD knowledge and treatment acceptability on help-seeking behavior	Strength of Beliefs in ADHD Knowledge Scale
Sciutto (2016)	Czech Republic, Germany, Greece, Iraq, the Republic of Korea,	2307	General education teachers, special education teachers	30 - 48 years	100%	--	Evaluate the relationship between training and ADHD knowledge in teachers	KADDS

	Saudi Arabia, South Africa, USA, Vietnam							
Seabi (2010)	South Africa	5	General education teachers	--	--	--	Examine teacher ADHD knowledge	Unnamed (Seabi, 2010)
Shahwan et al. (2020)	United Arab Emirates	137	Dentists	--	75.9%	--	Examine dentist ADHD knowledge and predictive factors	Unnamed (Shahwan et al., 2020)
Shapiro (1996)	USA	169	General education teachers, school administrative staff, school psychologists, other medical professionals, special education teachers	--	--	--	Describe a consultation program for professionals working with ADHD	ADHD Knowledge Test
Shetty & Rai (2014)	India	312	General education teachers	--	98.4%	--	Examine teacher ADHD knowledge and predictive variables	Unnamed (Shetty et al., 2014)
Shroff (2017)	India	106	General education teachers	*M* = 37.10, *SD* = 9.51 years	97%	--	Examine teacher knowledge of ADHD	KADDS
Small (2003)	USA	72	General education teachers	*M* = 39.9, *SD* = 10.6 years	97%	--	Examine teacher knowledge of ADHD and intervention	KADDS
Snider et al. (2003)	USA	45	Special education teachers, general education teachers	--	80%	--	Examine teacher knowledge of ADHD	Unnamed (Snider et al., 2003)

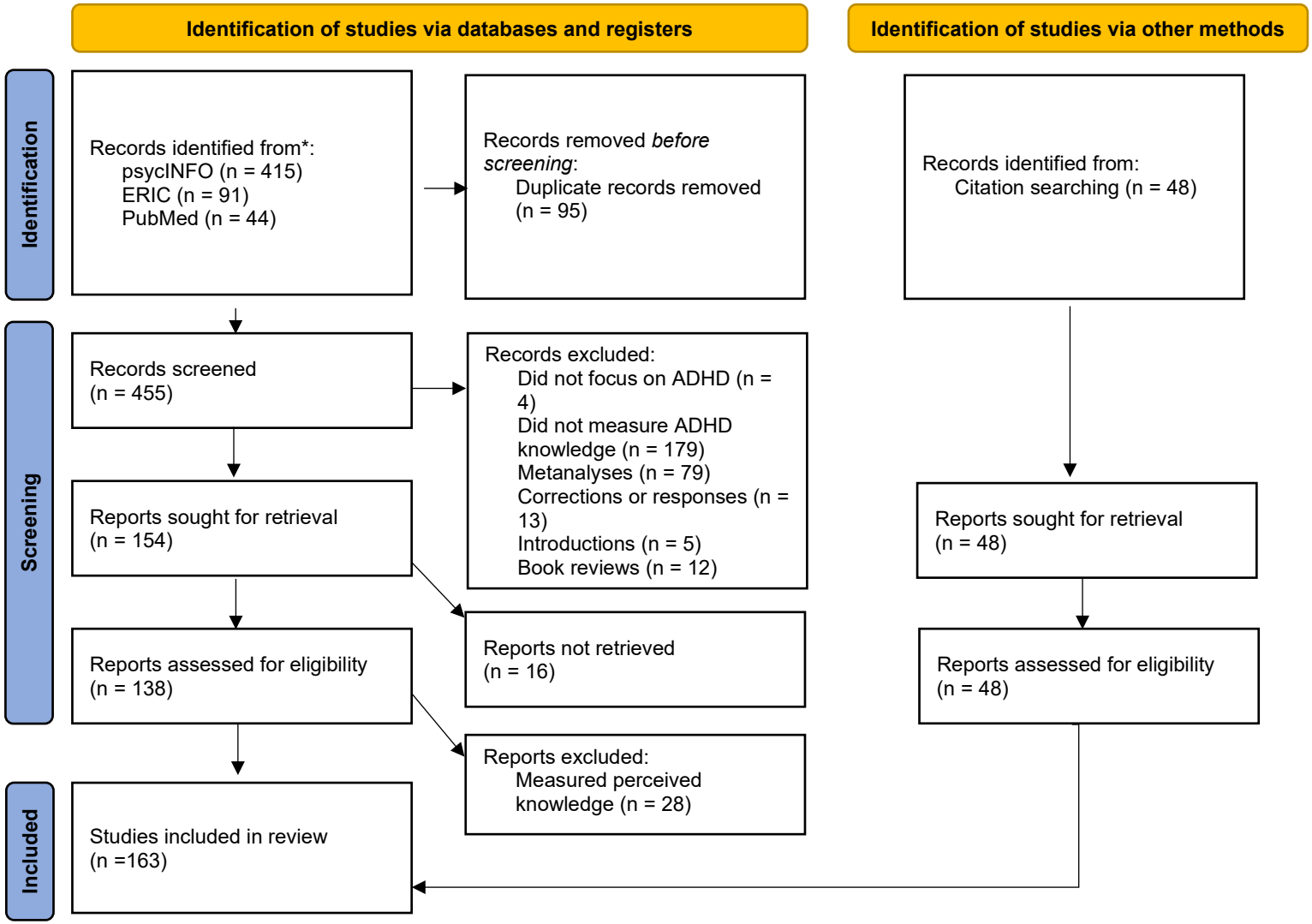
Soroa (2014)	Spain	752	General education teachers	20 - 64 years	86%	--	Develop an ADHD knowledge measure	Questionnaire to Assess Teachers' Knowledge of ADHD (QATKA)
Soroa et al. (2012)	Spain	182	General education teachers, psychologists, psychiatrists, medical doctors, professors	--	74.7%	--	Develop another version of an ADHD knowledge measure	Unnamed (Soroa et al 2012)
Soroa et al. (2014)	Spain	166	General education teachers, special education teachers	22-65 years	84.4%	--	Develop and ADHD knowledge measure	QATKA
Soroa (2016)	Spain	1278	General education teachers	20-65 years	85%	--	Examine teacher knowledge of ADHD and related factors	QATKA
Stampoltzis (2013)	Greece	234	General education teachers, special education teachers	36-45 years	78.5%	--	Compare general and special education teachers' ADHD knowledge	The ADHD Knowledge Based Questionnaire
Steiner (2014)	USA	172	Siblings	18-25 years	62.2%	7% Asian, 5.2% Black, 4.7% Latinx, 0.6% Native American, 75% White, 5.8% Multiracial, 0.5% Other	Evaluate the relationship between sibling knowledge of ADHD and relationship quality	Unnamed (Jerome et al., 1994)
Stormont (2005)	USA	138	General education teachers	--	95%	82% White, 18% Black	Examine teacher ADHD knowledge and related variables	The Preschool ADHD Questionnaire
Stroh et al. (2008)	USA	146	Parents	--	82.4%	--	Examine parent knowledge, attitudes, and information	Unnamed (Stroh et al., 2008)

Syed & Hussain (2010)	Pakistan	49	General education teachers	18 - 45 years	100%	--	sources about ADHD Develop and assess an ADHD training program	Unnamed (Syed & Hussein, 2010)
Taylor (2018)	Canada	29	People with ADHD	*M* = 40.0, *SD* = 9.2 years	73.4%	92.9% White		AKOS
Taylor (2020)	Canada	29	Parents	--	90%	68.9% White, 6.9% Asian, 24.1% Prefer not to Respond	Evaluate the relationship between parent ADHD knowledge, stress, and bullying	AKOS
Topkin (2015)	South Africa	200	General education teachers	*M* = 43, *SD* = 11 years	89%	33.8% Black, 40.9% Multiracial, 1.5% Asian, 23.7% White	Evaluate the relationship between parent ADHD knowledge, stress, and bullying	KADDS
Toye (2019)	Scotland	135	General education teachers, school administration, school psychologists	23-62 years	83%	--	Evaluate relationship between ADHD knowledge and stigma on inclusion	KADDS
Venter (2004)	South Africa	423	Psychiatrists, Medical doctors	30 – 60+ years	--	--	Examine ADHD knowledge, attitudes, and practices in psychiatrists and pediatricians	Unnamed (Venter et al., 2004)
Vereb (2004)	USA	47	General education teachers, special education teachers	--	94%	--	Evaluate relationship between teacher ADHD knowledge and acceptability of known interventions	KARE
Ward (2014)	Ireland	90	General education teachers	--	81.2%	--	Examine teacher ADHD knowledge	KADDS

Weyandt (2009)	USA	132	General education teachers, school psychologists, special education teachers	--	75%	--	Examine teachers' and school psychologists' knowledge of ADHD	ADHD Beliefs Scale
Webb (2017)	USA	54	General education teachers, preservice teachers	18 – 49 years	--	--	Develop an ADHD knowledge intervention	Knowledge and Beliefs Questionnaire
West (2005)	Australia	348	Parents, general education teachers	--	81.9%	--	Develop and assess an ADHD knowledge measure	KADD-Q
White (2011)	USA	134	General education teachers, special education teachers	22-68 years	87%	--	Assess the effectiveness of an informational workshop	Unnamed (White et al., 2011)
Zima (2013)	USA	529	People with ADHD	M = 10, SD = 1.8 years	19.4%	17.2% White	Evaluate the relationship of parent perceptions to care adherence and related factors	AKOS

Note. Values for age, gender, and race and ethnicity are blank when unreported by the manuscript.

Figure 1. Illustration of literature search and screening procedure



CHAPTER III

PREDICTING PARENT INTERVENTION FAVORABILITY: THE ROLES OF ADHD KNOWLEDGE AND ADHD STIGMA

Introduction

Attention-deficit/hyperactivity disorder (ADHD) is a high incidence neurodiverse condition. Clinically and educationally, it is conceptualized within the class of neurodevelopmental disorders and characterized by persistent patterns of inattentiveness and/or hyperactivity and impulsivity (American Psychiatric Association, 2023). ADHD presents with a myriad of associated strengths—such as creativity (White & Shah, 2006) and the ability to focus on subjects of interest for long periods (Royal et al., 2015)—and challenges—such as academic difficulties (Arnold et al., 2020) and executive dysfunction (Martel et al., 2007). When developing and evaluating programs of support for children with ADHD, it is important to consider these strengths, challenges, and additional protective factors (Climie, 2015). One such protective factor is parent knowledge of ADHD.

Parent knowledge of ADHD is highly influential in the outcomes and experiences of their children. For instance, parent knowledge of ADHD can serve as a protective factor against bullying toward their children with ADHD (Taylor et al., 2020). Psychoeducational programs for parents of children with ADHD have also shown efficacy in increasing parent knowledge following intervention. In addition to increased knowledge, these parents demonstrate increased ability to help their children manage

ADHD symptoms and adhere to medication interventions (Bai et al., 2015). Alternatively, adolescents with ADHD report that parents who have lower ADHD knowledge levels are less able to help them cope with symptoms and related behaviors and espouse more stigmatizing beliefs about ADHD (e.g., "ADHD is not real;" Golson et al., 2022).

Though parent knowledge of ADHD broadly is important, research suggests that parents demonstrate significant knowledge gaps within this domain. Parents report limited perceived knowledge of ADHD, particularly prior to the receipt of their child's diagnosis (Flood et al., 2019). Objective measures of parent knowledge of ADHD corroborate this finding. Climie and Henley (2018) found parents of children with ADHD demonstrated greater knowledge of ADHD symptoms than causes and outcomes. Similarly, a study of parent knowledge of ADHD conducted in Australia found that parents can identify features of ADHD but did not know that it has a lifelong course or about its genetic basis (Gilmore, 2010).

Demographic factors play a role in parent ADHD knowledge. For example, fathers generally have lower ADHD knowledge scores than mothers (e.g., Gerdes et al., 2020; Gilmore, 2010). Much attention in the literature has also been given to differences in ADHD knowledge across race and ethnicity. For example, Bussing and colleagues (2012) examined Black and White parents' and teens' knowledge of ADHD. They found Black parents were more likely to endorse the misconception that ADHD is caused by too much sugar intake and had less awareness of ADHD than White parents overall. Among Latinx parents, Gerdes et al. (2013) found that many lacked knowledge about ADHD etiology and effective interventions. Limited knowledge about the latter in particular

inhibited parent ability to seek appropriate services for their children. Socioeconomic status (SES) similarly is related to ADHD knowledge. In one study, economically disadvantaged parents were less informed about the causes of ADHD and had lower knowledge levels than economically advantaged parents generally (Bussing et al., 1998). Economically disadvantaged parents were also more likely to have limited knowledge about medication interventions for ADHD in another study (Bussing et al., 2007). This may be due, in part, to differences in available information sources across SES about ADHD. Economically advantaged parents are more likely to learn about ADHD from professionals or formal written publications compared to economically disadvantaged parents who are more likely to rely on media sources like television and the Internet (Bussing et al., 2007). Given the importance of credible information sources and the protective influence of ADHD knowledge on overall outcomes, public health campaigns and psychoeducational initiatives are vitally important.

Relation Between ADHD Knowledge and ADHD Stigma

Closely related to the construct of ADHD knowledge is ADHD stigma. ADHD stigma refers to prejudice, discrimination, and negative evaluations related to having or association with someone who has ADHD (Kellison et al., 2010). The effects of ADHD stigma can range from social rejection and limited social support to difficulty accessing intervention services (Kellison et al., 2010). Unfortunately, limited research has been conducted on ADHD stigma generally. However, the limited literature indicates people with ADHD are subject to greater social rejection than those with physical disabilities (Pescosolido et al., 2007). Moreover, children are more likely to associate violent

behavior with people who have ADHD or depression than people diagnosed with asthma (Coleman et al., 2009). Adult samples also endorse social distancing from people who have ADHD (Canu et al., 2008).

Research in other mental health domains points to the connection between increased knowledge of a disability and reduced stigma toward that disability. Simmons and colleagues (2017) found that English university students exhibited decreased stigma toward mental illness broadly following a psychoeducational session. This relation extends to other neurodevelopmental disorders closely related to ADHD. For example, negative stereotypes and stigma mediates the relation between autism knowledge and social distance from autistic individuals in China such that individuals with less autism knowledge espoused more negative stereotypes and stigma toward ADHD, resulting in greater social distance (Lu et al., 2021). Unfortunately, the relation between ADHD knowledge and stigma is not well studied—to the best of our knowledge, there is only one publication on this topic. In this study, Leung (2014) evaluated possible predictors of ADHD stigma in a general population sample in China. ADHD knowledge was not a significant predictor of ADHD stigma, but the strength of association with Chinese cultural values and participant age were significant predictors of ADHD stigma. Further research is needed to evaluate this relation or lack thereof in other samples and cultures.

Relation Between ADHD Knowledge and ADHD Intervention

Interventions for ADHD vary depending on setting, age, and services available. Best practices for ADHD intervention include parent training for preschool-aged children and a combination of behavioral and pharmacological interventions for school-aged

children (Wolraich et al., 2019). School-aged children with ADHD may also be eligible for special education services through the Individuals with Disabilities Education Improvement Act (IDEIA, 2011) or accommodations at school via a 504-plan (Rehabilitation Act, 1973). ADHD intervention services are vital to improving long-term outcomes for youth with ADHD, such as improving academic performance (Jitendra, et al., 2008), peer relationships (Morris et al., 2021), and emotion regulation (Vacher et al., 2020).

Many factors influence engagement in ADHD intervention. At the systems level, availability of providers, availability of interpretation services or bilingual providers, insurance coverage, transportation services, and public awareness of services all impact access and engagement. Individual and family factors such as social support and past experiences with intervention also play a role (Eiraldi et al., 2006). Though service use patterns for ADHD are not well studied, Cuffe and colleagues (2009) found less than half of youth with ADHD had received mental or behavioral health intervention and factors such as higher family education and cooccurring mental health concerns increased usage rates. Importantly, another significant factor in predicting intervention engagement is favorable views of the intervention (e.g., Eiraldi et al., 2006; Kellison, et al., 2010).

ADHD knowledge is also intimately related to favorability toward ADHD intervention services. Notably, most of the literature supporting the relation between intervention favorability and ADHD knowledge is based on samples other than parents (e.g., Toye et al., 2018). For example, Vereb and DiPerna (2004) found that teachers' knowledge of ADHD is positively correlated with favorable attitudes toward medication and behavioral intervention. A similar pattern holds true for college student samples—

college students who demonstrate greater ADHD knowledge also endorse more favorable attitudes toward pharmacological interventions (Sciutto, 2015). Conversely, those college students with lower knowledge scores were more likely to endorse dietary interventions and viewed medication as an intervention less favorably. Corkum and colleagues (1999) are the only research team to investigate the relation between ADHD knowledge and intervention favorability within parent samples. In a sample of 81 parents of children with ADHD, two important trends were found. First, parents with greater ADHD knowledge demonstrated greater favorability toward behavioral interventions such as parent training, but not medication. Second, despite lack of favorability toward medication, ADHD knowledge scores were positively correlated with the likelihood to enroll in intervention services and prescription medication use for ADHD. Notably, neither ADHD knowledge nor intervention favorability were predictive of long-term adherence (Corkum et al., 1999). Future research is needed to evaluate if this relation holds true in more contemporary samples.

ADHD Knowledge, ADHD Stigma, and Intervention Favorability

In Eiraldi and colleagues' (2006) Model of Help-Seeking Behavior, which describes factors of service utilization for ADHD with focus on minoritized populations, all three variables play a role. Specifically, the model describes a pathway from problem recognition to deciding to seek help to service selection to, finally, service use. In this model, parent ADHD knowledge, ADHD stigma, and attitudes about intervention all influence their decision to seek help. However, this model does not elaborate on the interrelations between the three constructs. Further, while relations between ADHD

knowledge and ADHD stigma and ADHD knowledge and intervention favorability have been studied, relatively little attention has been given to their interrelations, and the research that has been published in this domain has resulted in mixed findings.

For example, Toye and colleagues (2018) investigated variables that may predict favorable attitudes toward inclusion of children with ADHD in general education classrooms, including the educational and behavioral interventions required to make this possible. Using regression analysis, the authors found that high ADHD knowledge scores and low ADHD stigma were significant predictors in their sample of Scottish educators. A similar pattern was replicated in a sample of parents not currently seeking intervention for their child with ADHD (Taylor & Antshel, 2021). Favorable attitudes toward pharmacological and behavioral interventions for ADHD were predicted by three factors per a multiple regression analysis: (1) high ADHD knowledge, (2) low levels of ADHD stigma, and (3) positive experiences with past service providers for ADHD intervention. Conversely, Bussing and colleagues (2012) used a similar multiple regression paradigm to investigate predictors of willingness to engage in ADHD intervention in a mixed sample of parents, adolescents with ADHD, and service providers. While ADHD knowledge and intervention favorability were significant predictors, consistent with research, stigma was not a significant predictor (Bussing et al., 2012). Of note, stigma measured in this study was stigma toward intervention services for ADHD and not stigma toward ADHD generally, which may account for some of the discrepancy. However, further research is needed in this domain to better understand the relation between ADHD knowledge, ADHD stigma, and intervention favorability.

Current Study

Improved outcomes through intervention delivery for children with ADHD associated with reduced stigma and increased intervention engagement related to ADHD is an important domain of concern for researchers and practitioners alike. Despite the extant research highlighting the relations between parent knowledge of ADHD and stigma as well as ADHD knowledge and intervention favorability separately, the intersection of these three variables and their causal relation is lacking empirical attention. Preliminarily, research suggests that increased ADHD knowledge and low levels of stigma predict increased intervention favorability in educators (Toye et al., 2018) and parents (Taylor & Antshel, 2021). However, this relation has not been evaluated through a causal lens. As such, this study evaluated the potential mediating role of stigma in the relation between increased ADHD knowledge and intervention favorability. It is predicted that greater parent ADHD knowledge will predict less ADHD stigma which, in turn, increases favorability toward ADHD interventions.

Method

Participants

Participants were 266 parents of at least one school-aged (aged 5-18 years) child diagnosed with ADHD. The age range of 5-18 years was selected to include children in kindergarten through grade 12. Of the 535 people who initiated the survey, 209 did not meet inclusion criteria: parents of a child with ADHD aged 5-18 years, fluency in speaking and reading English, and residence in the United States. Fluency was selected as an inclusion criterion to reduce possible confounding factors related to linguistic

differences as research suggests school and clinical services differ for linguistically minoritized children (e.g., Ochoa et al., 2004). An additional 29 participants exited the survey prior to providing consent and 31 were excluded from analysis due to failed attention check questions. The resulting sample size of 266 parents exceeds the proposed target sample range of 200-250 participants needed for mediation analysis, assuming a medium effect of knowledge on stigma (Fritz & MacKinnon, 2007).

Participants were mostly White (n = 177, 66.5%) and employed full-time (n = 185, 69.5%). Parent gender was evenly distributed between men (n = 131, 49.2%) and women (n = 131, 49.2%). Two participants (0.8%) identified as nonbinary. Average participant age was 42.1 years (SD = 12.4). The racial composition for children was similar to their parents, being primarily White (n = 169, 63.5%). Parents answered the survey with a boy child in mind (n = 197, 74.1%), more often than a girl child. Average child age was 10.7 years (SD = 3.6). While most children were not receiving special education services (n = 163, 61.3%), the majority were currently (n = 261, 98.1%) or had previously (n = 262, 98.5%) received some form of clinical or school-based intervention. See Tables 3 and 4 for descriptive statistics.

Materials

Demographic Questionnaire

The demographic questionnaire included questions to verify inclusion criteria and gather participant background information such as race and ethnicity, gender, child diagnoses, diagnosing provider's profession, present ADHD symptoms, and parent income and employment. Questions related to previous and current ADHD service use

were also included, such as eligibility for special education services, use of medication, and behavioral interventions. Some questions were included at different time points but phrased differently to identify bot responders or inattentive participants (e.g., “Do you have a child between the age of 5-18?” and “How old is your child?”). In cases where participants had multiple children within the designated age range with ADHD, they were instructed to answer the questions with their youngest child in mind. Two attention check questions (“Please select the option that is not a vegetable” and “Please select Agree”) were included at random timepoints to identify inattentive respondents (Shamon & Berning, 2020; Silber et al., 2022).

Knowledge of Attention Deficit Disorders Scale

The Knowledge of Attention Deficit Disorders Scale (KADDS; Sciutto & Feldhamer, 2005) is a 39-item measure of a person’s knowledge of ADHD. This measure was selected because it is the most used ADHD measure and has the most reported psychometric evidence (Golson et al., 2023). Questions are presented with “true”, “false”, and “don’t know” response options. Psychometric support for the KADDS has been extensively evaluated in samples of general and special education teachers (e.g., Sciutto et al., 2004), school personnel (e.g., Herbert et al., 2004), and college students (Sciutto & Terjesen, 2004). Across samples, the KADDS demonstrates strong internal consistency (α = .80-.90) and moderate test-retest reliability (r = .59-.76). Criterion validity of the KADDS is supported with teacher samples; teachers who consume more information sources related to ADHD receive higher scores on the measure (Sciutto & Feldhamer, 2005). The KADDS has been administered to parents previously (e.g., Climie & Henley, 2018; Losapio, 2010) but not evaluated for reliability and validity in this population. The

KADDS is scored by totaling the number of correctly answered questions. In the present sample, the KADDS demonstrated acceptable internal consistency (α = .78).

ADHD Stigma Questionnaire

Participants completed the ADHD Stigma Questionnaire (ASQ; Kellison et al., 2010) to evaluate parent stigma toward ADHD. The ASQ is a 26-item measure presented on a 4-point Likert scale (1 = "strongly disagree" to 4 = "strongly agree"). It was initially developed and evaluated for psychometric quality in a sample of adolescents (Kellison et al., 2010). The ASQ demonstrated strong internal consistency (α = .93). Confirmatory factor analysis (CFA) supported a three-factor structure. Strong internal consistency (α = .92) and the proposed factor structure were confirmed in a sample of general and special education teachers. In the current sample, the ASQ demonstrated similarly strong internal consistency (α = .95). The ASQ is scored by averaging all item responses. Higher average scores indicate greater ADHD stigma.

Intervention Favorability Ratings

Sliding scale items were used to measure participant favorability broadly toward (1) intervention for children with ADHD, (2) for their child specifically, and (3) for their child if intervention were recommended by a professional. Additional specific ratings were obtained for specific ADHD intervention types, including: medication, psychological and behavioral support, parent training, and educational support such as special education or 504-plan accommodations. For each intervention type, parents rated favorability across the same three scenarios as the broad ratings. A total of 15 sliders were presented. The scales ranged from 0 ("strongly disagree") to 100 ("strongly agree")

following the foundational prompt “I have a favorable opinion of . . . ” Internal consistency for favorability ratings was strong (α = .96).

Procedure

Participants were recruited through Prolific (2023), a market research crowdsourcing service. Prolific has been used in previous research, demonstrating high data quality compared to other panel and crowdsourcing options (e.g., Douglas, et al., 2023; Peer et al., 2021). Potential participants were presented with a brief description of the study, inclusion criteria, and a link to the survey, which included screening questions, the informed consent document, the demographic survey, KADDS, ASQ, and intervention favorability rating scales. The latter three elements were presented in randomized order to reduce order effects. Those who did not meet inclusion criteria were immediately exited from the survey prior to presentation of the informed consent document. Following completion of the survey, participants were paid $10 for their time. See Appendix C for data collection materials.

Data Analysis Plan

Data cleaning and analysis were conducted in RStudio (Version 2023.09.25). First, the outcome measures were scored per the respective measures’ scoring guidelines, resulting in a total correct score on the KADDS and a mean rating score on the ASQ. Some participants were missing responses (n = 22, 8.3%), in most cases missing only 1 item, with no evidence of systematic or cross-measure missingness. Intervention favorability ratings were averaged across intervention recipient (i.e., children with

ADHD, the participant's child, and their child if recommended by a professional) for each intervention type to create five intervention favorability scores. Additionally, the first three broad intervention favorability ratings were also averaged across intervention recipient to create a broad intervention favorability score.

Missingness was visualized using the package "naniar" (Tierney & Cook, 2023). As such, in cases where participants were missing 1-2 items on the KADDS, their missing responses were marked as incorrect. The one case where more than 2 items were missing was excluded from scoring. For participants missing 1 item on the ASQ (no more than 1 item was missing on this measure), averages were computed excluding that item. Similar proration of item scores has been supported in conjunction with full information maximum likelihood (FIML) estimation where missingness is minimal and does not appear to be systematic (Wu et al., 2022). The combination of item proration and FIML has been supported in mitigating loss of power and produces less biased and more efficient estimates relative to other methods such as multiple imputations (e.g., Enders & Bandalos, 2001; Mazza et al., 2015).

Second, descriptive statistics were computed for parent and child demographic variables and performance on outcome measures. Internal consistency using Cronbach's alpha was computed for the outcome measures to evaluate reliability and validity of these measures in the current sample. Internal consistency analyses were conducted using the "psych" package (Revelle, 2023). Correlations between outcome measures were computed and associated scatterplots generated to evaluate statistical significance and linearity of relations. Pearson product moment correlations were generated using the "furniture" package (Barrett & Brignone, 2017).

Third and finally, a path analysis through structural equation modeling (SEM) was conducted to evaluate the proposed mediating role of stigma in the relation between ADHD knowledge and overall intervention favorability, such that greater ADHD knowledge leads to decreased stigma which, in turn, increases intervention favorability (see Figure 2). With the "lavaan" (Rosseel, 2012) package, the model was fit using FIML to account for missingness and to estimate means and variances for relations between variables with each other rather than using existing sample means. SEM was selected over Hayes' (2017) PROCESS mediation algorithm, which relies on regression, because the latter does not allow for missingness in the data. Covariates were not added to the model because the initial model did not achieve statistical significance (see Results). Informed by correlations within the sample and literature (e.g., Sciutto, 2015; Vereb & DiPerna, 2004), two additional exploratory path models were generated and evaluated (1) using the broad intervention favorability rating for children with ADHD and (2) the average of medication favorability ratings.

Results

Participants on average answered 20.7 (*SD* = 5.6) KADDS items correctly, of a possible 39. The average stigma score on the ASQ was 2.6 (*SD* = 0.5). The broad intervention favorability rating average (*M* = 67.9, *SD* = 23.3), as well as average intervention favorability toward psychological and behavioral supports (*M* = 72.9, *SD* = 22.0), parent training (*M* = 72.1, *SD* = 21.1), and educational support (*M* = 68.7, *SD* = 25.1) were generally high. The lowest average favorability rating was toward medication (*M* = 53.8, *SD* = 29.3). See Table 3.

Pearson product moment correlations between ADHD knowledge as measured by the KADDS, ADHD stigma scores on the ASQ, and average broad intervention favorability ratings were not statistically significant. KADDS scores were only significantly correlated with average medication favorability, $r = .175$, $p = .004$, and the broad favorability rating for intervention for children with ADHD, $r = .133$, $p = .030$. ASQ scores were likewise positively and significantly correlated with average medication favorability, $r = .171$, $p = .005$. As expected, intervention favorability ratings were all significantly correlated with each other, $p < .001$. However, the correlations between average broad intervention favorability and intervention favorability for children with ADHD, for the participant's child, and when recommended by a professional should be interpreted with caution as these ratings comprise the average broad intervention favorability score (see Table 5).

The proposed mediation model that assumed decreased ADHD stigma mediates the causal relationship between increased ADHD knowledge and increased average broad intervention favorability did not meet statistical significance. This is unsurprising given the non-significant correlation between these variables in this sample. Specifically, while the direct effect of ADHD knowledge on average broad intervention favorability was approaching significance, $b = 0.474$, $p = .060$, there was no evidence in this sample of an indirect effect of ADHD knowledge on ADHD stigma, $b = 0.004$, $p = .441$, or of ADHD stigma on average broad intervention favorability, $b = 3.380$, $p = .232$.

Due to the significant correlations between ADHD knowledge and intervention favorability for children with ADHD, a path analysis was conducted substituting average broad intervention favorability from the original model with broad intervention

favorability for children with ADHD. This model supported a significant direct effect of ADHD knowledge on broad intervention favorability for children with ADHD, $b = 0.538$, $p = .033$. The indirect effects of ADHD knowledge on ADHD stigma, $b = 0.004$, $p = .441$, and of ADHD stigma on broad favorability toward intervention for children with ADHD, $b = 3.470$, $p = .221$ were again not supported.

A final variation on the proposed model substituted average broad intervention favorability with average favorability toward medication. This model again yielded a significant direct effect of ADHD knowledge on average medication favorability, $b = 0.866$, $p = .005$. The indirect effect of ADHD stigma on average medication favorability was also supported, $b = 9.517$, $p = .006$. However, the indirect effect of ADHD knowledge on ADHD stigma was not statistically significant, $b = 0.004$, $p = .440$. See Figure 3 for an illustration of models.

Discussion

The current study aimed to evaluate the potential mediating role of ADHD stigma in the relation between increased ADHD knowledge and intervention favorability. Broadly, parents in this sample demonstrated ADHD knowledge levels (e.g., Climie & Henley, 2018; Losapio, 2010), ADHD stigma (e.g., Kellison et al., 2010), and intervention favorability (e.g., Corkum et al., 1999) consistent with previous literature. By comparison, the lack of correlation between ADHD knowledge, ADHD stigma, and average broad intervention favorability differs from the extant literature. It is well-established within the related fields (Lu et al., 2021), and mental health broadly (Simmons et al., 2017), that greater knowledge is correlated with lower stigma across

populations. While this relation has not been well studied within ADHD, the failure to replicate it in the current sample points to the need for additional inquiry. It may be that, like Leung (2014) found in China, other variables such as participant age or cultural values are better predictors of ADHD stigma.

ADHD knowledge and broad average intervention favorability ratings were likewise not significantly correlated in this sample. However, small significant positive correlations between ADHD knowledge and medication favorabilty were observed, like the findings of Sciutto (2015) in a general population sample. ADHD knowledge was also significantly positively correlated with intervention favorabilty for children with ADHD broadly. The differences in relations across ratings suggests that parent views of intervention may not be generalizable across modalities and populations. Likewise, the relation to ADHD knowledge varies. This trend may account for the discrepant findings in the broader literature regarding the relation. For example, while some studies found ADHD knowledge to be correlated with favorability toward medication (e.g., Sciutto, 2015), others did not (e.g., Corkum et al., 1999). Additional research examining the variability in parent views of interventions across modalities and populations is warranted.

The proposed mediation model hypothesizing that increased ADHD knowledge leads to increased average broad intervention favorability by way of decreased ADHD stigma was not supported in this sample. This is unsurprising given the lack of significant correlation between these variables within the sample. However, given the discrepant findings in the literature surrounding these variables' interrelations (e.g., Bussing et al., 2012; Taylor & Antshel, 2021) as well as the above-mentioned variability in intervention

favorability ratings may point to a possible explanation. Notably, while Bussing and colleagues (2012) evaluated predictors of intervention favorability broadly, stigma toward interventions rather than toward ADHD broadly was included in the model. Conversely, Taylor and Antshel (2021) evaluated predictors of favorability toward medication and behavioral interventions specifically and measured ADHD stigma broadly. It appears the interrelations between ADHD knowledge, ADHD stigma, and intervention favorability are more complex and specific than has yet been systematically investigated.

This possibility is supported by the two exploratory path models computed using (1) broach intervention favorability for children with ADHD and (2) medication favorability. In both cases, while the indirect effect of ADHD knowledge on ADHD stigma remains unsupported, the direct effect of ADHD knowledge on the favorability in both models was supported. Further, in the case of medication favorability but not for broad intervention favorability for children with ADHD, ADHD stigma had a small positive indirect effect. Parents with greater ADHD stigma were slightly more likely to endorse favorable views of medication as an intervention for ADHD. This is contrary to the relation noted by Taylor and Antshel (2021), which noted a negative correlation. Thus, additional research is needed to better understand the intricacies of parent ADHD knowledge, stigma, and intervention favorability.

Implications

The findings of this study and extant literature suggest that parents continue to demonstrate ADHD knowledge gaps. Given the protective effect of parent ADHD

knowledge (e.g., Taylor et al., 2020) and its direct link to increased intervention favorability for children with ADHD, endeavors to increase parent knowledge are paramount. Systematic factors such as access to information sources (e.g., Bussing et al., 2007; Sciutto, 2015) may influence ADHD knowledge. Thus, public awareness campaigns that utilize a variety of modalities (e.g., video recordings, billboards, pamphlets, community seminar series) may aid in increasing knowledge across populations. Further, practitioners in schools, primary care, and more intensive care settings should prioritize psychoeducation throughout the course of services, particularly during screening and diagnosis to best position parents and families.

The findings of this study also suggest that ADHD knowledge and ADHD stigma may not be related as expected and observed in other fields and disorders. Established practice and wisdom attempts to reduce stigma through psychoeducation and increasing knowledge (e.g., Simmons et al., 2017). However, if the two variables are not related, additional interventions may be warranted to reduce ADHD stigma and its associated negative impacts. For example, finding opportunities to increase contact and/or proximity with people with ADHD may be a valuable addition to current psychoeducational programs.

Finally, the variability in parent intervention favorability based on intervention type and population and its implications for the causal relation with ADHD knowledge suggests that practitioners need to be intentional and thorough when discussing recommendations. Taking time to discuss parent perceptions of each recommended intervention, explain its structure and benefits, and problem-solve possible barriers to access rather than advocating for intervention generally and providing a list of possible

agencies and clinics may improve parent knowledge of intervention, intervention favorability, and engagement with services. For public health, this finding suggests that specificity in materials and campaigns (e.g., for medication) rather than promoting awareness of services generally may be warranted.

Limitations and Future Directions

Some limitations of the current study include the limited representation of racially and ethnically minoritized participants relative to White participants. While our sample demographics overrepresent Black or African American and multiracial parents, Latinx and White parents were underrepresented relative to the 2020 United States' Census (U.S. Census Bureau, 2020). Given the disparities in ADHD information access (Bussing et al., 2007) and service utilization (Eiraldi et al., 2006), additional research would benefit from oversampling techniques. Additionally, the current study administered all measures concurrently. To further understand the interrelations (or lack thereof) between ADHD knowledge, ADHD stigma, and intervention favorability, future studies might measure these and additional outcome variables (e.g., treatment engagement, treatment adherence) before and after psychoeducational intervention.

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Table 3
Summary statistics for participant demographic information

	n	%
Race/Ethnicity		
White	177	66.5
Black or African American	41	15.4
Latino/a/x or Hispanic	16	6
Asian or Asian American	16	6
Multiracial	11	4.1
Native American	3	1.1
Prefer Not to Respond	2	0.8
Gender		
Woman	131	49.2
Man	131	49.2
Nonbinary	2	0.8
Prefer Not to Respond	2	0.8
Employment Status		
Full-Time	185	69.5
Part-Time	41	15.4
Homemaker	18	6.8
Unemployed and Looking for Work	13	4.9
Unemployed and Not Looking for Work	5	1.9
Retired	3	1.1
Student	1	0.4
	M	*SD*
Age in Years	42.1	12.4
Household Income (in dollars)	83228.90	54172.3
KADDS Total Correct Score	20.7	5.6
ASQ Score	2.6	0.5
Broad Intervention Favorability for Children with ADHD	67.5	23.5
Broad Intervention Favorability for Participant's Child	67.1	24.4
Broad Intervention Favorability if Recommended	69.3	24.3
Broad Average Intervention Favorability	67.9	23.3
Average Medication Favorability	53.8	29.3
Average Psychological and Behavioral Support Favorability	72.9	22.0
Average Parent Training Favorability	72.1	21.1
Average Educational Support Favorability	68.7	25.1

Notes. Possible KADDS score ranges from 0-39. ASQ possible scores range from 1-4. Favorability ratings completed on a 0-100 slider scale.

Table 4
Summary statistics for selected child demographic information

	n	%
Race/Ethnicity		
White	169	63.5
Black or African American	42	15.8
Latino/a/x or Hispanic	21	7.9
Asian or Asian American	16	6
Multiracial	16	6
Native American	2	0.8
Gender		
Girl	66	24.8
Boy	197	74.1
Prefer Not to Respond	3	1.1
Diagnosing Professional		
Pediatrician	127	47.7
Psychiatrist	57	21.4
Psychologist	79	29.7
Other	3	1.1
Special Education Services		
Yes	103	38.7
No	163	61.3
Currently Receiving Intervention		
Yes	261	98.1
No	5	1.9
Previously Received Intervention		
Yes	262	98.5
No	4	1.5
	M	*SD*
Current Age in Years	10.7	3.6
Age in Years at Diagnosis	7.4	3.0
Number of Symptoms Endorsed	6.1	3.6

Notes. Number of symptoms calculated by summing the number of endorsed symptom statements derived from the DSM-5 criteria for ADHD for a possible maximum of 18.

Table 5
Correlations between outcome measures

	1	2	3	4	5	6	7	8	9	10
(1) KADDS Score	1.00									
(2) ASQ Score	.047 (.442)	1.00								
(3) Broad Average Favorability	.118 (.055)	.078 (.204)	1.00							
(4) Medication Favorability	.175 (.004)**	.171 (.005)**	.299 (<.001)***	1.00						
(5) Psychological /Behavioral Favorability	.105 (.088)	.083 (.177)	.612 (<.001) ***	.294 (<.001) ***	1.00					
(6) Parent Training Favorability	.051 (.409)	.070 (.257)	.499 (<.001) ***	.304 (<.001) ***	.555 (<.001) ***	1.00				
(7) Education Support Favorability	.0385 (.534)	.009 (.879)	.604 (<.001) ***	.314 (<.001) ***	.572 (<.001) ***	.565 (<.001) ***	1.00			
(8) Broad Favorability for Children with ADHD	.133 (.030)*	.080 (.193)	.960 (<.001) ***	.304 (<.001) ***	.598 (<.001) ***	.521 (<.001) ***	.565 (<.001) ***	1.00		
(9) Broad Favorability for Their Child	.108 (.079)	.077 (.209)	.973 (<.001) ***	.278 (<.001) ***	.573 (<.001) ***	.468 (<.001) ***	.599 (<.001) ***	.899 (<.001) ***	1.00	
(10) Broad Favorability if Recommended	.112 (.069)	.070 (.255)	.970 (<.001) ***	.289 (<.001) ***	.603 (<.001) ***	.463 (<.001) ***	.586 (<.001) ***	.890 (<.001) ***	.925 (<.001) ***	1.00

Note. * $p > .05$, ** $p > .01$, $p > .001$; broad average favorability derived from an average of ratings of intervention favorability for children with ADHD overall, the participant's child, and when recommended by a professional.

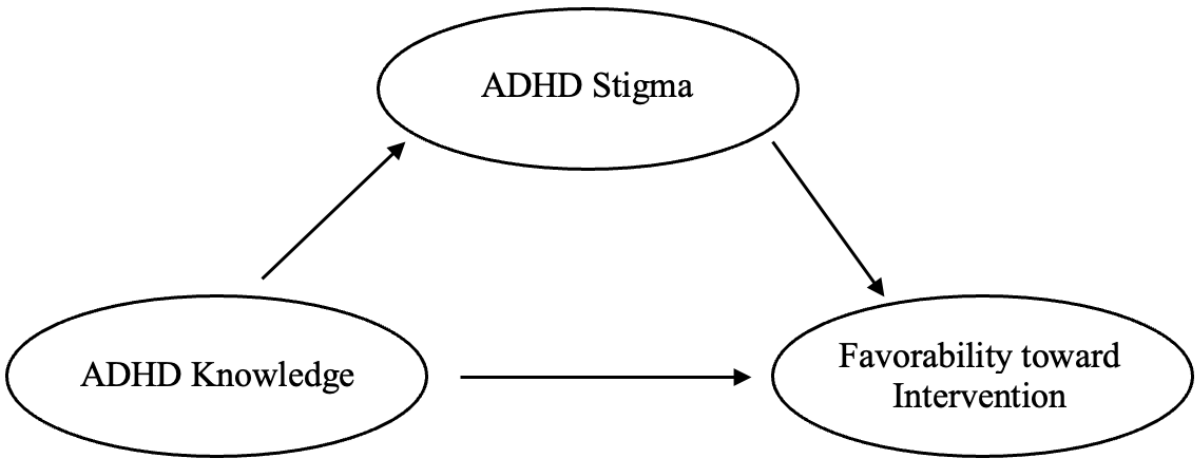
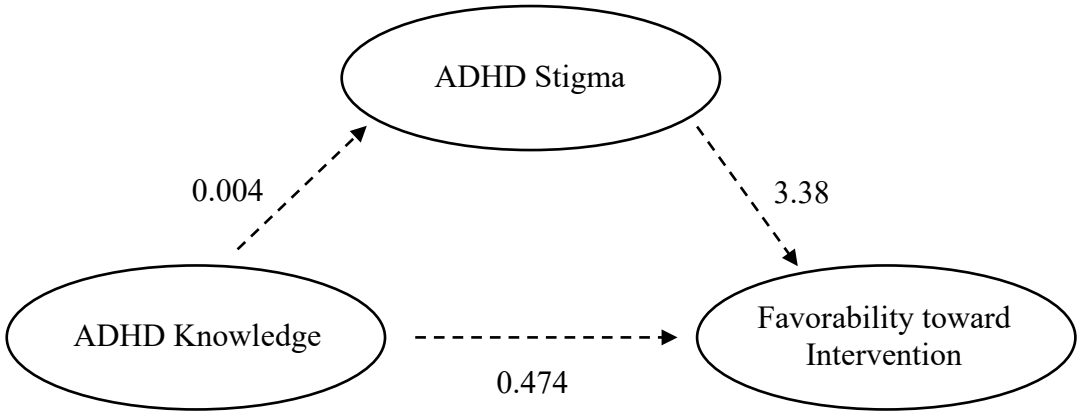


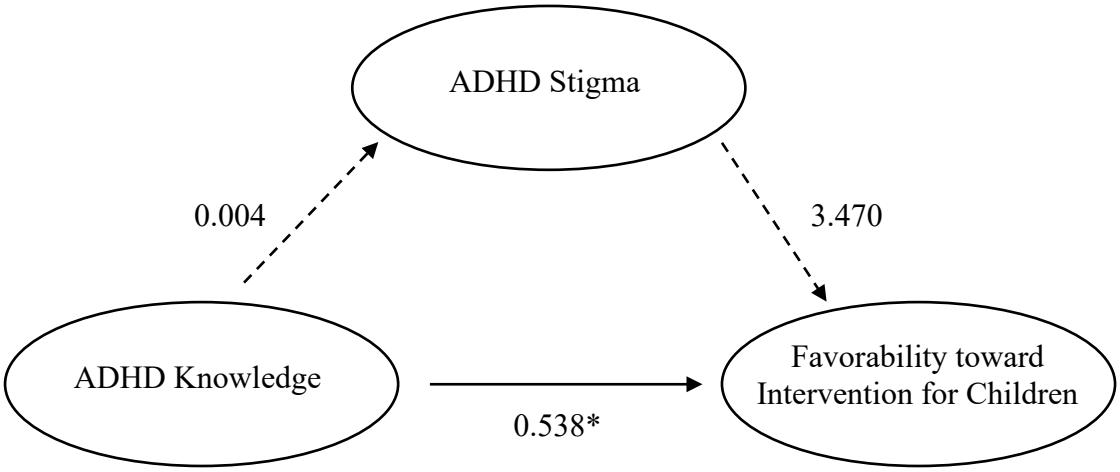
Figure 2

An illustration of the proposed relation between ADHD knowledge, ADHD stigma, and intervention favorability using a mediation model

Theoretical Model:



Exploratory Model 1:



Exploratory Model 2**:**

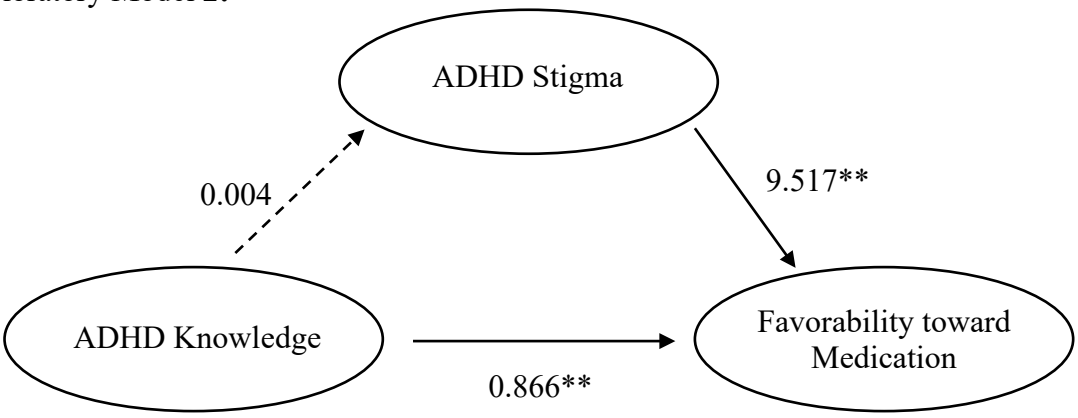


Figure 3

An illustration of the three path models depicting the relation between ADHD knowledge, ADHD stigma, and various intervention favorability ratings and their associated parameter estimates (*b*). *Note*. Dotted lines indicate direct and indirect effects that are not statistically significant. Solid lines indicate direct and indirect effects that are statistically significant. Statistical significance indicated by an asterisk: * $p < .05$, ** $p < .01$ *** $p < .001$.

CHAPTER 4

GENERAL DISCUSSION

Attention-deficit/hyperactivity disorder (ADHD) is a neurodevelopmental condition characterized by inattention and/or hyperactivity and impulsivity (American Psychiatric Association [APA], 2023). In addition to the symptoms and behaviors characteristic of ADHD, it often co-occurs with conditions such as oppositional defiant disorder (ODD) and conduct disorder (CD) (Barkley, 2015), substance use disorders (Charach et al., 2011), mood disorders such as anxiety or depression (Sandstrom et al., 2021), and learning disorders (APA, 2023). The symptoms of ADHD paired with its possible co-occurring conditions can lend to a variety of potential suboptimal outcomes for individuals including greater risk of encounters with school discipline (Robb et al., 2011) and the criminal justice system (Bussing et al., 2012), peer rejection and bullying (Grygiel et al., 2018), and academic and occupational challenges (Barkley & Fischer, 2011). However, access to and receipt of timely identification and intervention is associated with improved outcomes (Arnold et al., 2020).

Knowledge of ADHD appears to be associated with positive views of and engagement in identification and intervention services (e.g., Eiraldi et al., 2006). In particular, the literature suggests the knowledge of ADHD has influence on favorability toward intervention across populations, including teachers (Vereb & DiPerna, 2004), parents (Corkum et al., 1999), and the general population (Sciutto, 2015). Increasing intervention favorability and ADHD knowledge is a possible avenue for increasing intervention engagement (Corkum et al., 1999). Additionally, ADHD knowledge can

increase service quality among professionals (Perle & Vasilevskis, 2021) and decrease stigma toward ADHD (Kosyluk et al., 2016). This dissertation comprises two studies that evaluate current issues related to ADHD knowledge measurement and the relation between ADHD knowledge, ADHD stigma, and intervention favorability. Together, these studies contribute to the understanding of ADHD knowledge and its implications for researchers, practitioners, and families.

The first study reviewed ADHD knowledge studies to evaluate reported psychometric evidence for the utilized ADHD knowledge measures across populations. While the review yielded an impressive quantity (n = 96) of measures, there was a general lack of reported psychometric evidence, which limits the ability of researchers and trainers to evaluate a measure and results from its use. The review also found that most ADHD knowledge measures are created and used with only one population, with teachers serving as the most studied population. Additionally, less than 25% of ADHD knowledge measure validation studies report racial/ethnic demographic data and among those that did, the samples were mostly White. Among the reviewed measures, a total of 10 measures demonstrated strong or promising psychometric support and fewer were used across populations and with racially and ethnically minoritized (REM) populations (e.g., the Knowledge of Attention Deficit Disorders Scale [KADDS]; Sciutto et al., 2000).

Drawing from the review completed in the first study, the second study used the KADDS (Sciutto et al., 2000) in a path analysis to evaluate the causal relation between ADHD knowledge, ADHD stigma, and intervention favorability. Within the present sample, ADHD knowledge, ADHD stigma, and broad average intervention favorability

were not correlated nor was their evidence of a causal relation between the three constructs. However, when evaluating intervention favorability through more specific lenses, significant relations emerged. Specifically, increased ADHD knowledge has a direct effect on both broad intervention favorability for children with ADHD and medication favorability. While the indirect effect of ADHD knowledge on ADHD stigma was not supported in this sample across models, ADHD stigma had a significant indirect effect on medication favorability. Taken together, these findings support the extant literature that ADHD knowledge and stigma are important avenues for influencing parent favorability toward intervention. However, the relations do not hold across interventions overall and indicate the factors associated with parent intervention favorability may vary across intervention modality. Further research is warranted to better understand these relations in parents and other populations.

This dissertation contributes meaningfully to the broader literature on ADHD knowledge. While ADHD knowledge benefits from significant scholarly inquiry, previous research has neglected to evaluate the current state of the psychometric quality of ADHD knowledge measures or evaluate the relation between ADHD knowledge and related constructs such as ADHD intervention favorability. The systematic review of ADHD knowledge measures informed measure selection for the mediation analysis and can serve a similar function for other researchers and practitioners selecting ADHD knowledge measures to best suit their population of interest for research and training. Similarly, the finding that the relation between ADHD knowledge and intervention favorability varies based on intervention type and who receives the intervention provides

a valuable foundation for further inquiry into ADHD knowledge and avenues to increase favorability toward and engagement in ADHD intervention.

General Implications

The findings of the first study imply that the priorities of ADHD knowledge research may benefit from a change from the creation of new measures to a focus on evaluating and revising existing measures across populations. Similarly, when researchers, trainers, and practitioners are selecting an ADHD knowledge measure, priority should be given to measures with strong psychometric quality across populations as well as applicability to the population of interest. For example, despite the significant number of ADHD knowledge measures, very few include racial/ethnic demographic information in their sample statistics and, among those that do, representation of REM participants is lacking. Efforts to validate (and revise as needed) existing ADHD knowledge measures in diverse samples can improve the broader understanding of ADHD knowledge.

The systematic review illustrated the relative lack of scholarly attention given to ADHD knowledge among parents. The second study is consistent with previous research that parents demonstrate knowledge gaps warranting further study and psychoeducational efforts. Public health campaigns and individual or group psychoeducational efforts may also benefit from tailored and specific information about interventions for ADHD to increase parent knowledge of their child's options and favorability toward those interventions. Use of valid and reliable ADHD knowledge measures can serve as an important tool to evaluate the efficacy of these efforts.

Review of Future Directions

Given that the systematic review was limited to peer-reviewed articles, dissertations, and theses available in English, it is likely that there are additional ADHD knowledge measures exist and could provide additional insight into trends in ADHD knowledge measurement broadly as well as factors that may predict publication of a measure. Future research may include additional gray literature and collaborate with international researchers to review measures available only in other languages to better understand the breadth and quality of available tools. In both the psychometric evaluation of ADHD knowledge measures and their use in studies such as the described mediation analysis, possible oversampling of REM participants to combat the previous underrepresentation. Further, to better understand the causal relation between ADHD knowledge and other outcomes such as intervention favorability, future research may evaluate ADHD knowledge and intervention favorability before and after psychoeducational intervention.

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APPENDICES

Appendix A. Author Permission Forms

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Dear Jennifer Ha:

I am in the process of preparing my dissertation in the psychology department at Utah State University. I plan to defend in March 2024 and complete my degree program in August 2024.

I am writing to you to request your permission to include our published study: "A Systematic Review of ADHD Knowledge Measures and Their Psychometric Support" (published in 2023 in the *Journal of Pediatric Psychology*). I will include acknowledgments and/or appropriate citations to your work in the dissertation. The bibliographic citation listed below will appear in the corresponding dissertation chapter:

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Additionally, please indicate your approval of this request by signing in the space provided. If you have any questions, please call me at the number below. I look forward to your quick response.

Thank you for your previous collaboration.

Best wishes,

Megan Golson, MS
Doctoral Candidate
School Psychology
Utah State University
[redacted]

I hereby give permission to Megan Golson to use the above listed published work in her dissertation.

Signed: Jennifer Ha

Date: 02/10/24

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I am in the process of preparing my dissertation in the psychology department at Utah State University. I plan to defend in March 2024 and complete my degree program in August 2024.

I am writing to you to request your permission to include our published study: "A Systematic Review of ADHD Knowledge Measures and Their Psychometric Support" (published in 2023 in the *Journal of Pediatric Psychology*). I will include acknowledgments and/or appropriate citations to your work in the dissertation. The bibliographic citation listed below will appear in the corresponding dissertation chapter:

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Thank you for your previous collaboration.

Best wishes,

Megan Golson, MS
Doctoral Candidate
School Psychology
Utah State University
[redacted]

I hereby give permission to Megan Golson to use the above listed published work in her dissertation.

Signed: Renae Stigler

Date: 2/16/2024

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Dear Jac'lyn Bera:

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Thank you for your previous collaboration.

Best wishes,

Megan Golson, MS
Doctoral Candidate
School Psychology
Utah State University
[redacted]

I hereby give permission to Megan Golson to use the above listed published work in her dissertation.

Signed: _____

Date: 2/28/2024

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Dear Kaelah Kieffer:

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Please advise me of any changes you require.

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Thank you for your previous collaboration.

Best wishes,

Megan Golson, MS
Doctoral Candidate
School Psychology
Utah State University
[redacted]

I hereby give permission to Megan Golson to use the above listed published work in her dissertation.

Signed: Kaelah Kieffer

Date: 3/5/2024

2/10/2024

Dear Abigail Gibson:

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Thank you for your previous collaboration.

Best wishes,

Megan Golson, MS
Doctoral Candidate
School Psychology
Utah State University
[redacted]

I hereby give permission to Megan Golson to use the above listed published work in her dissertation.

Signed: Abigail Gibson

Date: 2/16/24

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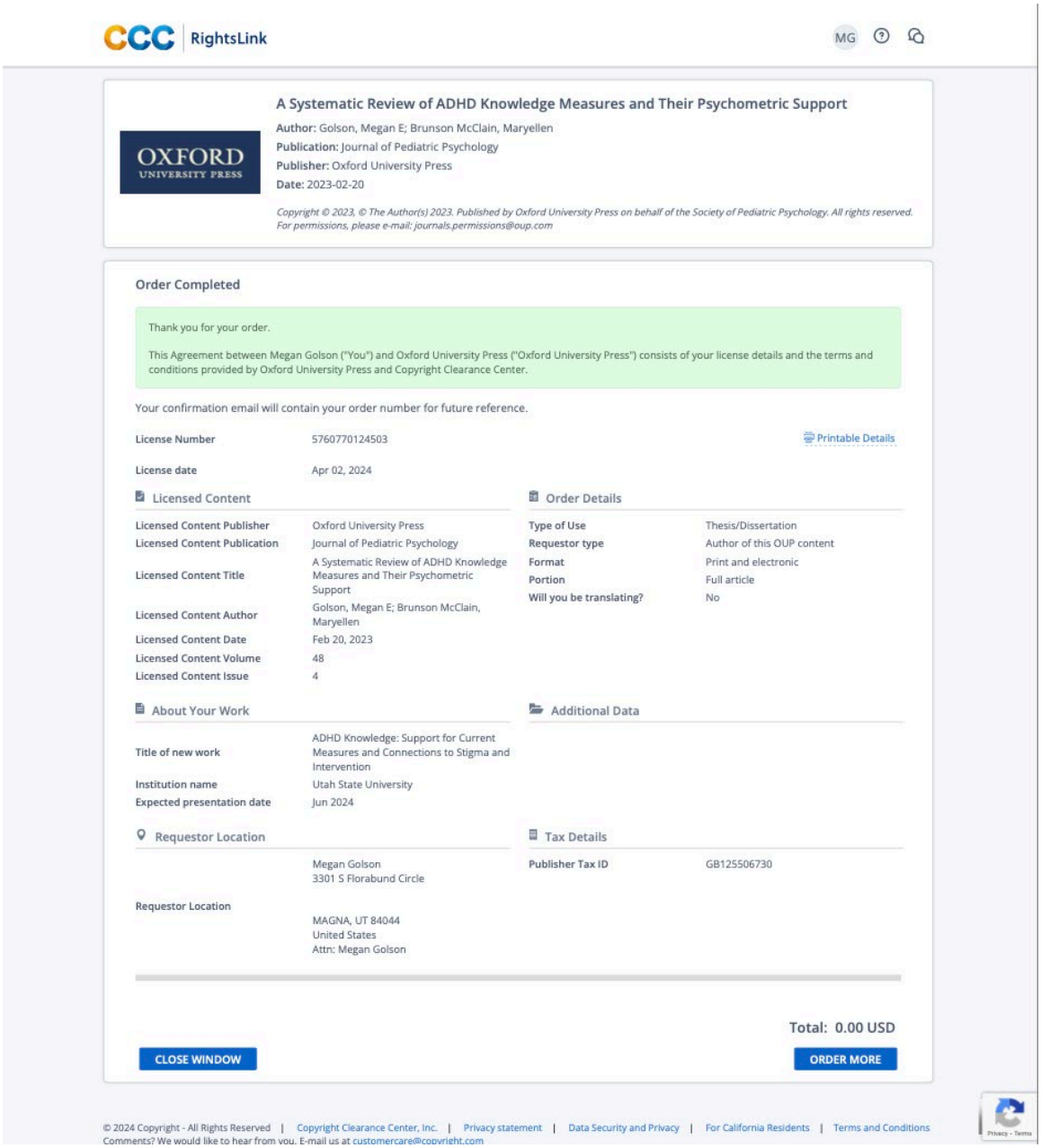

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1	[article_id]	Article ID *First Author Name & Year (e.g., Golson2021)*	text
2	[author]	Section Header: *Study Basics* First Author *Last name of first author should match first half of the record ID.*	text, Required
3	[pubyear]	Publication Year *Publication year should match second half of the record ID.*	text, Required
4	[pubtype]	Publication Type	radio, Required 1, Peer-Reviewed Journal Article 2, Dissertation or Thesis 3, Other
5	[journal] Show the field ONLY if: [pubtype] = '1'	Journal Name *Please use the journal's full name rather than its abbreviation (e.g., Journal of Autism and Developmental Disorders instead of JADD). If the journal name is abbreviated on the document, type it into Google to make sure you get the correct full name.*	text, Required
6	[pubtype_other] Show the field ONLY if: [pubtype] = '3'	Other Publication *State what type of publication this record is (e.g., newsletter, research record, conference proceedings)*	text, Required
7	[studypurpose]	Study Purpose *Review abstract, current study, and/or methods to identify study purpose. If you check the fourth option, make sure there was a correlation or regression analysis to evaluate relationship.*	checkbox, Required 1, studypurpose___1, Development of ADHD Knowledge Measure 2, studypurpose___2, Measurement of ADHD Knowledge in a Specific Population 3, studypurpose___3, Evaluation of an Intervention 4, studypurpose___4, Relationship of ADHD Knowledge to Other Construct(s) 5, studypurpose___5, Other Purpose
8	[studypurpose_other] Show the field ONLY if: [studypurpose(5)] = '1'	Other Study Purpose *Briefly state study purpose if not described above.*	text, Required
9	[purposequote]	Study Purpose Statement *Paste the purpose statement from the abstract or current study section of the manuscript.*	notes, Required
10	[resultquote]	Study Result Statement *Paste the central findings written in the abstract of the manuscript.*	notes, Required
11	[population]	Section Header: *Study Sample* What population does the study sample? *Identify which population(s) are included in the sample.*	checkbox, Required 1, population___1, General Population or Lay People 2, population___2, Professionals Likely to Work with People with ADHD 3, population___3, Professionals in Training 4, population___4, Other Population

12	[generalpopulation] Show the field ONLY if: [population(1)] = '1'	General Population Groups Included *Select the group(s) that best describe the sample discussed in the manuscript.*	checkbox, Required 1 generalpopulation___1 People with ADHD 2 generalpopulation___2 Peers (i.e., of the same age group as identified interest group with ADHD) 3 generalpopulation___3 Parents 4 generalpopulation___4 General education teachers 5 generalpopulation___5 School administrative staff 6 generalpopulation___6 Siblings 7 generalpopulation___7 Other
13	[generalpopulation_other] Show the field ONLY if: [generalpopulation(7)] = '1'	Other General Population Group *List the general population group(s) represented if not included in the options above.*	text, Required
14	[profpopulation] Show the field ONLY if: [population(2)] = '1'	Professional Population Groups Included *Select the group(s) that best describe the sample discussed in the manuscript.*	checkbox, Required 1 profpopulation___1 Psychologists (e.g., clinical, counseling) 2 profpopulation___2 School Psychologists 3 profpopulation___3 Psychiatrists 4 profpopulation___4 Medical Doctors (e.g., pediatricians, general practitioners) 5 profpopulation___5 ABA / BCBAs 6 profpopulation___6 Other Medical Professionals (e.g. nurses, nurse practitioners, physicians assistant) 7 profpopulation___7 Special Education Teachers 8 profpopulation___8 Other
15	[profpopulation_other] Show the field ONLY if: [profpopulation(8)] = '1'	Other Professional Population Group *List the professional population group(s) represented if not included in the options above.*	text, Required
16	[trainpopulation] Show the field ONLY if: [population(3)] = '1'	Training Population Groups Included *Select the group(s) that best describe the sample discussed in the manuscript.*	checkbox, Required 1 trainpopulation___1 Psychologists (e.g., clinical, counseling) 2 trainpopulation___2 School Psychologists 3 trainpopulation___3 Psychiatrists 4 trainpopulation___4 Medical Doctors (e.g., pediatricians, general practitioners) 5 trainpopulation___5 ABA / BCBAs 6 trainpopulation___6 Other Medical Professionals (e.g., nurses, nurse practitioners, physicians assistant) 7 trainpopulation___7 Special Education Teachers 8 trainpopulation___8 Other
17	[trainpopulation_other] Show the field ONLY if: [trainpopulation(8)] = '1'	Other Training Population Group *List the training population group(s) represented if not included in the options above.*	text, Required

18	[population_other] Show the field ONLY if: [population(4)] = '1'	Other Population *List the population represented in the manuscript if not included in the option above.*	text, Required
19	[samplesize]	Sample Size *How many total participants COMPLETED the study?*	text, Required
20	[country]	Study Country or Countries *List the countries where sampling occurred. Please use abbreviations only for USA.*	text, Required
21	[racedata]	Was racial/ethnic demographic information reported?	yesno, Required 1 Yes 0 No
22	[race_ethnicity] Show the field ONLY if: [racedata] = '1'	Racial/Ethnic Categories Represented *If a manuscript collapses two or more of these categories (e.g., Asian and Native Hawaiian) please select Other and describe in the associated field. Base your selection on the manuscript wording.*	checkbox, Required 1 race_ethnicity___1 Asian or Asian American 2 race_ethnicity___2 Black or African American 3 race_ethnicity___3 Latinx, Hispanic, or of Spanish Origin 4 race_ethnicity___4 Middle Eastern or North African 5 race_ethnicity___5 Native American or Alaska Native 6 race_ethnicity___6 Native Hawaiian or Pacific Islander 7 race_ethnicity___7 White or European American 8 race_ethnicity___8 Biracial or Multiracial 9 race_ethnicity___9 Other race or ethnicity
23	[race_ethnicity_other] Show the field ONLY if: [race_ethnicity(9)] = '1'	What other race/ethnicity category was included? *If this is in reference to a collapsed category, list all categories collapsed.*	text, Required
24	[asian] Show the field ONLY if: [race_ethnicity(1)] = '1'	Percent of Asian or Asian American Participants:	text, Required
25	[black] Show the field ONLY if: [race_ethnicity(2)] = '1'	Percent of Black or African American Participants:	text, Required
26	[latinx] Show the field ONLY if: [race_ethnicity(3)] = '1'	Percent of Latinx, Hispanic, or Participants of Spanish Origin:	text, Required
27	[mena] Show the field ONLY if: [race_ethnicity(4)] = '1'	Percent of Middle Eastern or North African Participants:	text, Required
28	[native_american] Show the field ONLY if: [race_ethnicity(5)] = '1'	Percent of Native American or Alaska Native Participants:	text, Required
29	[pacific_islander] Show the field ONLY if: [race_ethnicity(6)] = '1'	Percent of Native Hawaiian or Pacific Islander Participants:	text, Required
30	[white] Show the field ONLY if: [race_ethnicity(7)] = '1'	Percent of White or European American Participants:	text, Required
31	[multiracial] Show the field ONLY if: [race_ethnicity(8)] = '1'	Percent of Biracial or Multiracial Participants:	text, Required

32	[other_race] Show the field ONLY if: [race_ethnicity(9)] = '1'	Percent of Participants Included in "Other Race/Ethnicity" Category:	text, Required
33	[knowledge_measure]	Section Header: *Knowledge Measure* ADHD Knowledge Measure Used *State the name of the measure without abbreviations. If unnamed, type "Unnamed (Authors, Year)" referencing the authors of the measure rather than the authors of the manuscript, if different. If adapted from a previous measure, cite the current authors but note in the Notes section who the measure was adapted from.*	text, Required
34	[measure_type]	Measure Type *Note: For these and related questions, evaluate only the knowledge measure itself or if multi-construct measure, only the knowledge portions.*	radio, Required 1 Quantitative 2 Qualitative (e.g., open-ended questions, interview) 3 Both Quantitative and Qualitative
35	[quant_type] Show the field ONLY if: [measure_type] = '3' or [measure_type] = '1'	Quantitative Response Format	checkbox, Required 1 quant_type___1 Likert Scale 2 quant_type___2 True/False 3 quant_type___3 True/False/Don't Know 4 quant_type___4 Yes/No 5 quant_type___5 Yes/No/Don't Know 6 quant_type___6 Checklist 7 quant_type___7 Multiple Choice 8 quant_type___8 Multiple Choice/Don't Know 9 quant_type___9 Other
36	[quant_type_other] Show the field ONLY if: [quant_type(9)] = '1'	Other Quantitative Format *Describe what response format(s) were used other than listed above.*	text, Required
37	[qual_type] Show the field ONLY if: [measure_type] = '2' or [measure_type] = '3'	Qualitative Response Format	radio, Required 1 Interview 2 Open-Ended Questions 3 Other
38	[qual_type_other] Show the field ONLY if: [qual_type] = '3'	Other Qualitative Format	text, Required
39	[sample_valid]	Did the authors validate the measure in this sample?	yesno, Required 1 Yes 0 No
40	[prev_valid]	Did the authors report reliability/validity evidence for the measure from a previous study?	yesno, Required 1 Yes 0 No
41	[reliability] Show the field ONLY if: [sample_valid] = '1' or [prev_valid] = '1'	Was reliability data reported? *Consider both own sample and previous validation analyses in your response.*	yesno, Required 1 Yes 0 No
42	[reliability_type] Show the field ONLY if: [reliability] = '1'	Reliability Evidence Reported	checkbox, Required 1 reliability_type___1 Internal Consistency (e.g., Chronbach's alpha, KR-20) 2 reliability_type___2 Interrater Reliability 3 reliability_type___3 Test-Retest Reliability

43	[validity] Show the field ONLY if: [sample_valid] = '1' or [prev_valid] = '1'	Was validity data reported? *Consider both own sample and previous validation analyses in your response.*	yesno, Required 1 Yes 0 No
44	[validity_type] Show the field ONLY if: [validity] = '1'	Validity Evidence Reported	checkbox, Required 1 validity_type___1 Face Validity (i.e., measure "looks right") 2 validity_type___2 Convergent Validity (e.g., correlation with other related measures) 3 validity_type___3 Discriminant Validity (e.g., correlation with unrelated measures) 4 validity_type___4 Criterion Validity (e.g., correlation with related outcomes) 5 validity_type___5 Construct Validity (e.g., CFA, IRT) 6 validity_type___6 Content Validity (i.e., accurately includes important aspects of ASD knowledge)
45	[measure_included]	Is the measure provided?	yesno, Required 1 Yes 0 No
46	[supplemental]	Is there supplemental material?	radio, Required 1 Yes 2 No
47	[notes]	Notes *Include any important information related to your ratings or that might be useful in analysis.*	notes
48	[review_coding_original_complete]	Section Header: *Form Status* Complete?	dropdown 0 Incomplete 1 Unverified 2 Complete

Appendix D. Data Collection Materials

Start of Block: Screening Questions

I1 Thank you for your interest in this survey. Before beginning, we would like to ask a couple of screening questions to see if you qualify to participate.

Q112 What is your Prolific ID?

_____

S1 Are you a parent?

- ○ No (1)
- ○ Yes (2)

Skip To: End of Survey If Are you a parent? = No

Q94 Does at least one of your children have ADHD, as diagnosed by an appropriately licensed professional?

- ○ No (1)
- ○ Yes (2)

Skip To: End of Survey If Does at least one of your children have ADHD, as diagnosed by an appropriately licensed professio... = No

- ○ *Display This Question:*
- ○ *If Does at least one of your children have ADHD, as diagnosed by an appropriately licensed professio... = Yes*

Q106 Who diagnosed your child?

- ○ A pediatrician (1)
- ○ A psychologist (2)
- ○ A psychiatrist (3)
- ○ Other, please describe: (4)

_____

- ○ My child has not been diagnosed with ADHD (5)

Skip To: End of Survey If Who diagnosed your child? = My child has not been diagnosed with ADHD

Q100 How old is your child with ADHD?

- ○ Younger than 4 years old (1)
- ○ 5 (2)
- ○ 6 (3)
- ○ 7 (4)
- ○ 8 (5)
- ○ 9 (6)
- ○ 10 (7)
- ○ 11 (8)
- ○ 12 (9)
- ○ 13 (10)
- ○ 14 (11)
- ○ 15 (12)
- ○ 16 (13)
- ○ 17 (14)
- ○ 18 (15)
- ○ 19 years or older (16)

Skip To: End of Survey If How old is your child with ADHD? = Younger than 4 years old
Skip To: End of Survey If How old is your child with ADHD? = 19 years or older

S2 What is your age in years?

_____

Skip To: End of Survey If Condition: What is your age in years? Is Greater Than 118. Skip To: End of Survey.
Skip To: End of Survey If Condition: What is your age in years? Is Less Than 18. Skip To: End of Survey.

Q95 Do you speak English fluently?

- ○ No (1)
- ○ Yes (2)

Skip To: End of Survey If Do you speak English fluently? = No

S3 Can you read English fluently?

- ○ Yes (1)
- ○ No (2)

Skip To: End of Survey If Can you read English fluently? = No

S4 Do you currently reside in the United States?

- ○ No (1)
- ○ Yes (2)

Skip To: End of Survey If Do you currently reside in the United States? = No

S5 What state do you currently live in?

- ○ Alabama (1)
- ○ Alaska (2)
- ○ Arizona (3)
- ○ Arkansas (4)
- ○ California (5)
- ○ Colorado (6)
- ○ Connecticut (7)
- ○ Delaware (8)

- ○ Florida (9)
- ○ Georgia (10)
- ○ Hawaii (11)
- ○ Idaho (12)
- ○ Illinois (13)
- ○ Indiana (14)
- ○ Iowa (15)
- ○ Kansas (16)
- ○ Kentucky (17)
- ○ Louisiana (18)
- ○ Maine (19)
- ○ Maryland (20)
- ○ Massachusetts (21)
- ○ Michigan (22)
- ○ Minnesota (23)
- ○ Mississippi (24)
- ○ Missouri (25)
- ○ Montana (26)
- ○ Nebraska (27)
- ○ Nevada (28)
- ○ New Hampshire (29)
- ○ New Jersey (30)
- ○ New Mexico (31)
- ○ New York (32)
- ○ North Carolina (33)
- ○ North Dakota (34)

- ○ Ohio (35)
- ○ Oklahoma (36)
- ○ Oregon (37)
- ○ Pennsylvania (38)
- ○ Rhode Island (39)
- ○ South Carolina (40)
- ○ South Dakota (41)
- ○ Tennessee (42)
- ○ Texas (43)
- ○ Utah (44)
- ○ Vermont (45)
- ○ Virginia (46)
- ○ Washington (47)
- ○ West Virginia (48)
- ○ Wisconsin (49)
- ○ Wyoming (50)
- ○ Washington DC (51)
- ○ Puerto Rico (52)
- ○ Guam (53)
- ○ American Samoa (54)
- ○ Northern Mariana Islands (55)
- ○ US Virgin Islands (56)
- ○ None of the Above (57)

Skip To: End of Survey If What state do you currently live in? = None of the Above
End of Block: Screening Questions

Start of Block: Informed Consent

Q115 Parent Views of ADHD and ADHD Services

Introduction

You are invited to participate in a research study conducted by Dr. Maryellen McClain and Megan Golson, researchers in the Psychology department at Utah State University. The purpose of this research is to investigate parent views of attention-deficit/hyperactivity disorder (ADHD) and available services for ADHD. Your participation is entirely voluntary. This form includes detailed information on the research to help you decide whether to participate. Please read it carefully and ask any questions you have before you agree to participate.

Procedures

Your participation will involve answering some demographic questions about yourself, completing two rating forms related to views on ADHD, and rating your favorability toward use of ADHD services. The entire survey is estimated to require 15-20 minutes to complete. We anticipate that 300 people will participate in this research study. Before you read this form, you responded to some questions regarding your eligibility for this study, including your age and whether you have a child with ADHD. Researchers will keep that data once you agree to enter the full study.

Risks

This is a minimal risk research study. That means that the risks of participating are no more likely or serious than those you encounter in everyday activities. The foreseeable risks or discomforts include the potential loss of data or data breach possible whenever completing online forms. In order to minimize those risks and discomforts, the researchers will utilize password-protected, HIPPA-compliant online databases to store

your participant information and collect no identifying data. If you have a bad research-related experience, please contact Megan Golson at megan.golson@usu.edu.

Benefits

Although you will not directly benefit from this study, it has been designed to learn more about parent views of ADHD and ADHD services. We cannot guarantee that you will directly benefit from this study, but a greater understanding of this topic can inform ADHD intervention.

Confidentiality

The researchers will make every effort to ensure that the information you provide as part of this study remains confidential. Your identity will not be revealed in any publications, presentations, or reports resulting from this research study. We will collect your information through a Qualtrics survey link. Online activities always carry a risk of a data breach, but we will use systems and processes that minimize breach opportunities. Data will be securely stored in a restricted-access folder on Box.com, an encrypted, cloud-based storage system. It is unlikely, but possible, that others (Utah State University or state or federal officials) may require us to share the information you give us from the study to ensure that the research was conducted safely and appropriately. We will only share your information if law or policy requires us to do so.

Voluntary Participation & Withdrawal

Your participation in this research is completely voluntary. If you agree to participate now and change your mind later, you may withdraw at any time by closing the survey window. If you choose to withdraw after we have already collected information about you, we will maintain that data due to the anonymous nature of our survey. We are

unable to determine whose data is whose to destroy your data should you choose to withdraw.

Payment

Because this is a survey panel, compensation is handled by Prolific. You will be compensated by Prolific, in line with the information you received in your invitation to participate. Only participants who complete the task in line with the invitation instructions will be paid through Prolific.

IRB Review

The Institutional Review Board (IRB) for the protection of human research participants at Utah State University has reviewed and approved this study. If you have questions about the research study itself, please contact Megan Golson at 801-673-7166 or megan.golson@usu.edu. If you have questions about your rights or would simply like to speak with someone other than the research team about questions or concerns, please contact the IRB Director at (435) 797-0567 or irb@usu.edu.

Informed Consent

By clicking "I agree" below, you agree that you are 18 years of age or older and wish to participate in this study. You indicate that you understand the risks and benefits of participation, and that you know what you will be asked to do. You also agree that you have asked any questions you might have, and are clear on how to stop your participation in the study if you choose to do so.

- ○ I agree (1)
- ○ I do not agree (2)

Skip To: End of Survey If Parent Views of ADHD and ADHD Services Introduction You are invited to participate in a research... = I do not agree

Q114 Please download this form for your records:

Q107 Please complete the following:

End of Block: Informed Consent

Start of Block: Demographics

I2 Please answer the following questions about yourself.

P1 Which of the following best describes your race/ethnicity?

- ☐ Asian or Asian American (1)
- ☐ Biracial (2)
- ☐ Black or African American (3)
- ☐ Latino/a/x or Hispanic (4)
- ☐ Multiracial (5)
- ☐ Native American (6)
- ☐ Native Hawaiian or Polynesian (7)
- ☐ North African or Middle Eastern (8)
- ☐ White (9)
- ☐ Other, please describe: (10) _____
- ☐ Prefer not to respond (11)

P2 With which gender do you most identify?

- ○ Male (1)
- ○ Female (2)
- ○ Nonbinary (3)
- ○ Other (4)
- ○ Prefer not to respond (5)

P3 Please estimate your household's annual income in dollars.

_____

P4 What is your current employment status?

- ○ Employed full time (40 or more hours per week) (1)
- ○ Employed part time (up to 39 hours per week) (2)
- ○ Unemployed and looking for work (3)
- ○ Unemployed and not looking for work (4)
- ○ Student (5)
- ○ Retired (6)
- ○ Homemaker (7)

P5 How many children do you have?

- ○ 1 (1)
- ○ 2 (2)
- ○ 3 (3)
- ○ 4 (4)
- ○ 5 (5)
- ○ 6 or more (6)

P6 How many of your children currently attend school or are old enough to attend public school (ages 5-18)?

- ○ 1 (1)
- ○ 2 (2)
- ○ 3 (3)
- ○ 4 (4)
- ○ 5 (5)
- ○ 6 or more (6)
- ○ My children are not within this age range (7)

Skip To: End of Survey If How many of your children currently attend school or are old enough to attend public school (ages... = My children are not within this age range

I3 For the following questions, please answer with your child in mind that has a diagnosis of ADHD. If multiple of your children are diagnosed with ADHD, answer these questions with the youngest child aged 5-18 diagnosed with ADHD in mind.

Page Break

Q97 At what age was your child diagnosed with ADHD?

_____

Q98 What services does your child currently receive for ADHD?

- ☐ Medication (1)
- ☐ Behavior intervention or counseling (2)
- ☐ Educational support (3)
- ☐ Parent training (4)
- ☐ Other, please describe: (5)

_____

Q99 What services has your child your used previously for ADHD?

- ☐ Medication (1)
- ☐ Behavior intervention or counseling (2)
- ☐ Educational support (3)
- ☐ Parent training (4)
- ☐ Other, please describe: (5)

_____

C1 Is your child diagnosed with a psychological disorder or mental illness other than ADHD by an appropriately licensed professional?

- ○ Yes (1)
- ○ No (2)

○ *Display This Question:*

○ *If Is your child diagnosed with a psychological disorder or mental illness other than ADHD by an app... = Yes*

Q21 What was their diagnosis?

- ☐ Depression (1)
- ☐ Anxiety (2)
- ☐ Oppositional Defiant Disorder (3)
- ☐ Conduct Disorder (4)
- ☐ Autism (5)
- ☐ Specific Learning Disorder (6)
- ☐ Other, please describe: (7)

_____

Q22 Does your child receive special education services?

- ○ No (1)
- ○ Yes (2)

○ *Display This Question:*

○ *If Does your child receive special education services? = Yes*

Q23 Under what special education eligibility category? (Select up to 2 if your state uses multiple)

- ☐ Autism (1)
- ☐ Other Health Impairment (2)
- ☐ Specific Learning Disorder (3)
- ☐ Orthopedic Impairment (4)

- [ ] Multiple Disabilities (5)
- [ ] Emotional Disturbance (6)
- [ ] Hearing Impairment (7)
- [ ] Visual Impairment (8)
- [ ] Deaf-Blindness (9)
- [ ] Speech Language Impairment (10)
- [ ] Deafness (11)
- [ ] Intellectual Disability (12)
- [ ] Traumatic Brain Injury (13)

Q24 What grade is your child in?

- ○ Kindergarten (1)
- ○ 1st grade (2)
- ○ 2nd grade (3)
- ○ 3rd grade (4)
- ○ 4th grade (5)
- ○ 5th grade (6)
- ○ 6th grade (7)
- ○ 7th grade (8)
- ○ 8th grade (9)
- ○ 9th grade (Freshman) (10)
- ○ 10th grade (Sophomore) (11)
- ○ 11th grade (Junior) (12)
- ○ 12th grade (Senior) (13)

Q25 Has your child ever been retained in school?

- ○ Yes (1)
- ○ No (2)

Q27 What is your child's gender?

- ○ Male (1)
- ○ Female (2)
- ○ Nonbinary (3)
- ○ Other (4)
- ○ Prefer not to say (5)

Q28 What race/ethnicity best describes your child?

- ○ Black or African American (1)
- ○ Latino/a/x or Hispanic (2)
- ○ White (3)
- ○ Asian or Asian American (4)
- ○ Native American (5)
- ○ Native Hawaiian or Polynesian (6)
- ○ North African or Middle Eastern (7)
- ○ Biracial (8)
- ○ Multiracial (9)
- ○ Other, please describe: (10) _____

Q101 Think of your child's behavior over the past 6 months. Which of the following have you seen in your child? Select all that apply:

- ☐ Fails to pay close attention to details or makes careless mistakes (1)
- ☐ Has difficulty sustaining attention (i.e., can't remain focused) (2)
- ☐ Does not seem to listen when spoken to directly (3)
- ☐ Does not follow through or fails to finish tasks (4)
- ☐ Has difficulty organizing tasks (e.g., poor time management, doesn't meet deadlines) (5)
- ☐ Avoids or is reluctant to do things that require sustained mental effort (6)
- ☐ Loses things necessary to complete tasks or activities (7)
- ☐ Easily distracted (8)
- ☐ Forgetful (9)
- ☐ Fidgets or squirms in seat (10)
- ☐ Leaves seat when remaining seated is expected (e.g., gets up during class) (11)
- ☐ Runs around or climbs when it is inappropriate to do so (12)
- ☐ Cannot play quietly (13)
- ☐ Is always moving (14)
- ☐ Talks too much (15)
- ☐ Blurts out an answer before the question has been completed (16)
- ☐ Has a hard time waiting their turn (17)
- ☐ Interrupts others (18)

End of Block: Demographics

Start of Block: KADDS

Q55 Most estimates suggest that ADHD occurs in approximately 15% of school age children.

- True (1)
- False (2)
- Don't Know (3)

Q56 Current research suggests that ADHD is largely the result of ineffective parenting skills.

- True (1)
- False (2)
- Don't Know (3)

Q57 ADHD children are frequently distracted by extraneous stimuli.

- True (1)
- False (2)
- Don't Know (3)

Q58 ADHD children are typically more compliant with their fathers than with their mothers.

- True (1)
- False (2)
- Don't Know (3)

Q59 In order to be diagnosed with ADHD, the child's symptoms must have been present before age 12.

- True (1)

- False (2)
- Don't Know (3)

Q60 ADHD is more common in the 1st degree biological relatives (i.e. mother, father) of children with ADHD than in the general population.

- True (1)
- False (2)
- Don't Know (3)

Q61 One symptom of ADHD children is that they have been physically cruel to other people.

- True (1)
- False (2)
- Don't Know (3)

Q62 Antidepressant drugs have been effective in reducing symptoms for many ADHD children.

- True (1)
- False (2)
- Don't Know (3)

Q63 ADHD children often fidget or squirm in their seats.

- True (1)
- False (2)
- Don't Know (3)

Q64 Parent and teacher training in managing an ADHD child are generally effective when combined with medication treatment.

- ○ True (1)
- ○ False (2)
- ○ Don't Know (3)

Q65 It is common for ADHD children to have an inflated sense of self-esteem or grandiosity.

- ○ True (1)
- ○ False (2)
- ○ Don't Know (3)

Q66 When treatment of an ADHD child is terminated, it is rare for the child's symptoms to return

- ○ True (1)
- ○ False (2)
- ○ Don't Know (3)

Q67 It is possible for an adult to be diagnosed with ADHD.

- ○ True (1)
- ○ False (2)
- ○ Don't Know (3)

Q68 ADHD children often have a history of stealing or destroying other people's things .

- ○ True (1)
- ○ False (2)
- ○ Don't Know (3)

Q69 Side effects of stimulant drugs used for treatment of ADHD may include mild insomnia and appetite reduction.

- ○ True (1)
- ○ False (2)
- ○ Don't Know (3)

Q70 Current wisdom about ADHD suggests two clusters of symptoms: One of inattention and another consisting of hyperactivity/impulsivity

- ○ True (1)
- ○ False (2)
- ○ Don't Know (3)

Q71 Symptoms of depression are found more frequently in ADHD children than in nonADHD children.

- ○ True (1)
- ○ False (2)
- ○ Don't Know (3)

Q72 Individual psychotherapy is usually sufficient for the treatment of most ADHD children.

- ○ True (1)
- ○ False (2)
- ○ Don't Know (3)

Q73 Most ADHD children "outgrow" their symptoms by the onset of puberty and subsequently function normally in adulthood.

- ○ True (1)
- ○ False (2)
- ○ Don't Know (3)

Q74 In severe cases of ADHD, medication is often used before other behavior modification techniques are attempted.

- ○ True (1)
- ○ False (2)
- ○ Don't Know (3)

Q75 In order to be diagnosed as ADHD, a child must exhibit relevant symptoms in two or more settings (e.g., home, school)

- ○ True (1)
- ○ False (2)
- ○ Don't Know (3)

Q76 If an ADHD child is able to demonstrate sustained attention to video games or TV for over an hour, that child is also able to sustain attention for at least an hour of class or homework.

- ○ True (1)
- ○ False (2)
- ○ Don't Know (3)

Q77 Reducing dietary intake of sugar or food additives is generally effective in reducing the symptoms of ADHD.

- ○ True (1)
- ○ False (2)

- ○ Don't Know (3)

Q78 A diagnosis of ADHD by itself makes a child eligible for placement in special education.

- ○ True (1)
- ○ False (2)
- ○ Don't Know (3)

Q79 Stimulant drugs are the most common type of drug used to treat children with ADHD

- ○ True (1)
- ○ False (2)
- ○ Don't Know (3)

Q80 ADHD children often have difficulties organizing tasks and activities.

- ○ True (1)
- ○ False (2)
- ○ Don't Know (3)

Q81 ADHD children generally experience more problems in novel situations than in familiar situations.

- ○ True (1)
- ○ False (2)
- ○ Don't Know (3)

Q82 There are specific physical features which can be identified by medical doctors (e.g. pediatrician) in making a definitive diagnosis of ADHD.

- ○ True (1)
- ○ False (2)
- ○ Don't Know (3)

Q83 In school age children, the prevalence of ADHD in males and females is equivalent.

- ○ True (1)
- ○ False (2)
- ○ Don't Know (3)

Q84 In very young children (less than 4 years old), the problem behaviors of ADHD children (e.g. hyperactivity, inattention) are distinctly different from age-appropriate behaviors of non-ADHD children.

- ○ True (1)
- ○ False (2)
- ○ Don't Know (3)

Q85 Children with ADHD are more distinguishable from normal children in a classroom setting than in a free play situation

- ○ True (1)
- ○ False (2)
- ○ Don't Know (3)

Q86 The majority of ADHD children evidence some degree of poor school performance in the elementary school years.

- ○ True (1)
- ○ False (2)
- ○ Don't Know (3)

Q87 Symptoms of ADHD are often seen in non-ADHD children who come from inadequate and chaotic home environments.

- ○ True (1)
- ○ False (2)
- ○ Don't Know (3)

Q88 Behavioral/Psychological interventions for children with ADHD focus primarily on the child's problems with inattention

- ○ True (1)
- ○ False (2)
- ○ Don't Know (3)

Q89 Electroconvulsive Therapy (i.e. shock treatment) has been found to be an effective treatment for severe cases of ADHD.

- ○ True (1)
- ○ False (2)
- ○ Don't Know (3)

Q90 Treatments for ADHD which focus primarily on punishment have been found to be the most effective in reducing the symptoms of ADHD

- ○ True (1)
- ○ False (2)
- ○ Don't Know (3)

Q91 Research has shown that prolonged use of stimulant medications leads to increased addiction (i.e., drug, alcohol) in adulthood.

- ○ True (1)
- ○ False (2)
- ○ Don't Know (3)

Q92 If a child responds to stimulant medications (e.g., Ritalin), then they probably have ADHD.

- ○ True (1)
- ○ False (2)
- ○ Don't Know (3)

Q93 Children with ADHD generally display an inflexible adherence to specific routines or rituals.

- ○ True (1)
- ○ False (2)
- ○ Don't Know (3)

Q110 Please select the option that is not a vegetable.

- ○ Plane (1)
- ○ Carrot (2)
- ○ Onion (3)
- ○ Lettuce (4)

End of Block: KADDS

Start of Block: ADHD Stigma Questionnaire

AS1 People who have ADHD feel guilty about it.

- ○ Strongly Disagree (1)
- ○ Disagree (2)

- ○ Agree (3)
- ○ Strongly Agree (4)

Q30 People's attitudes about ADHD may make persons with ADHD feel worse about themselves.

- ○ Strongly Disagree (1)
- ○ Disagree (2)
- ○ Agree (3)
- ○ Strongly Agree (4)

Q31 Someone who has ADHD would think it's risky to tell others about it.

- ○ Strongly Disagree (1)
- ○ Disagree (2)
- ○ Agree (3)
- ○ Strongly Agree (4)

Q32 People with ADHD lose their jobs when their employers find out.

- ○ Strongly Disagree (1)
- ○ Disagree (2)
- ○ Agree (3)
- ○ Strongly Agree (4)

Q33 People with ADHD work hard to keep it a secret.

- ○ Strongly Disagree (1)
- ○ Disagree (2)
- ○ Agree (3)

- ○ Strongly Agree (4)

Q34 Someone with ADHD feel they aren't as good a person as others because they have ADHD.

- ○ Strongly Disagree (1)
- ○ Disagree (2)
- ○ Agree (3)
- ○ Strongly Agree (4)

Q35 People with ADHD are treated like outcasts

- ○ Strongly Disagree (1)
- ○ Disagree (2)
- ○ Agree (3)
- ○ Strongly Agree (4)

Q36 People with ADHD feel damaged because of it.

- ○ Strongly Disagree (1)
- ○ Disagree (2)
- ○ Agree (3)
- ○ Strongly Agree (4)

Q37 After learning they have ADHD, a person may feel set apart and isolated from the rest of the world.

- ○ Strongly Disagree (1)
- ○ Disagree (2)
- ○ Agree (3)

- ○ Strongly Agree (4)

Q38 Most people think that a person with ADHD is damaged.

- ○ Strongly Disagree (1)
- ○ Disagree (2)
- ○ Agree (3)
- ○ Strongly Agree (4)

Q39 A person with ADHD feels that they are bad because of it.

- ○ Strongly Disagree (1)
- ○ Disagree (2)
- ○ Agree (3)
- ○ Strongly Agree (4)

Q40 Most people with ADHD are rejected when others find out.

- ○ Strongly Disagree (1)
- ○ Disagree (2)
- ○ Agree (3)
- ○ Strongly Agree (4)

Q41 People who have ADHD are very careful about who they tell.

- ○ Strongly Disagree (1)
- ○ Disagree (2)
- ○ Agree (3)
- ○ Strongly Agree (4)

Q42 Some people who learn of another person having ADHD grow distant.

- ○ Strongly Disagree (1)
- ○ Disagree (2)
- ○ Agree (3)
- ○ Strongly Agree (4)

Q43 After learning they have ADHD, people worry about others discriminating against them

- ○ Strongly Disagree (1)
- ○ Disagree (2)
- ○ Agree (3)
- ○ Strongly Agree (4)

Q44 Most people are uncomfortable around someone with ADHD.

- ○ Strongly Disagree (1)
- ○ Disagree (2)
- ○ Agree (3)
- ○ Strongly Agree (4)

Q45 People with ADHD worry that others may judge them when they learn that they have ADHD.

- ○ Strongly Disagree (1)
- ○ Disagree (2)
- ○ Agree (3)
- ○ Strongly Agree (4)

Q46 People with ADHD regret having told some people that they have ADHD.

- ○ Strongly Disagree (1)
- ○ Disagree (2)
- ○ Agree (3)
- ○ Strongly Agree (4)

Q47 As a rule, people with ADHD feel that telling others that they have ADHD was a mistake.

- ○ Strongly Disagree (1)
- ○ Disagree (2)
- ○ Agree (3)
- ○ Strongly Agree (4)

Q48 People don't want someone with ADHD around their children once they know that person has ADHD.

- ○ Strongly Disagree (1)
- ○ Disagree (2)
- ○ Agree (3)
- ○ Strongly Agree (4)

Q49 Some people act as though it's the person's fault that they have ADHD.

- ○ Strongly Disagree (1)
- ○ Disagree (2)
- ○ Agree (3)
- ○ Strongly Agree (4)

Q50 People with ADHD have lost friends by telling them they have ADHD.

- ○ Strongly Disagree (1)
- ○ Disagree (2)
- ○ Agree (3)
- ○ Strongly Agree (4)

Q51 People with ADHD have told others close to them to keep the fact that they have ADHD a secret.

- ○ Strongly Disagree (1)
- ○ Disagree (2)
- ○ Agree (3)
- ○ Strongly Agree (4)

Q52 The good points of people with ADHD tend to be ignored.

- ○ Strongly Disagree (1)
- ○ Disagree (2)
- ○ Agree (3)
- ○ Strongly Agree (4)

Q53 People seem afraid of a person with ADHD once they learn they have ADHD.

- ○ Strongly Disagree (1)
- ○ Disagree (2)
- ○ Agree (3)
- ○ Strongly Agree (4)

Q54 When people learn that someone has ADHD, they look for flaws in their character.

- ○ Strongly Disagree (1)
- ○ Disagree (2)
- ○ Agree (3)
- ○ Strongly Agree (4)

Q111 Please select Agree to show you are paying attention.

- ○ Strongly Disagree (1)
- ○ Disagree (2)
- ○ Agree (3)
- ○ Strongly Agree (4)

End of Block: ADHD Stigma Questionnaire

Start of Block: Treatment Favorability

Q3 Please rate the following:

	Strongly disagree 0 10 20 30 40 50 60 70 80 90 100 **Strongly agree**
I have a favorable opinion of intervention services for children and adolescents with ADHD. ()	
I have a favorable opinion of intervention services for my child with ADHD. ()	
I have a favorable opinion of intervention services recommended by an appropriately licensed professional for my child with ADHD. ()	

Q102 Please rate the following:

	0 10 20 30 40 50 60 70 80 90 100
I have a favorable opinion of pharmacological intervention (e.g., medications) for children and adolescents with ADHD. ()	
I have a favorable opinion of pharmacological intervention (e.g., medications) for my child diagnosed with ADHD. ()	
I have a favorable opinion of pharmacological intervention (e.g., medications) recommended by an appropriately licensed professional for my child diagnosed with ADHD. ()	

Q03 Please rate the following

	0 10 20 30 40 50 60 70 80 90 100
I have a favorable opinion of psychological or behavioral treatment (e.g., therapy) for children and adolescents with ADHD. ()	
I have a favorable opinion of psychological or behavioral treatment (e.g., therapy) for my child diagnosed with ADHD. ()	
I have a favorable opinion of psychological or behavioral treatment (e.g., therapy)recommended by an appropriately licensed professional for my child diagnosed with ADHD. ()	

Q104 Please rate the following

	0 10 20 30 40 50 60 70 80 90 100

I have a favorable opinion of parent training interventions for children and adolescents with ADHD. ()	
I have a favorable opinion of parent training interventions for my child diagnosed with ADHD. ()	
I have a favorable opinion of parent training interventions recommended by an appropriately licensed professional for my child diagnosed with ADHD. ()	

Q105 Please rate the following

	0 10 20 30 40 50 60 70 80 90 100
I have a favorable opinion of educational services (e.g., special education, 504-plan) for children and adolescents with ADHD. ()	
I have a favorable opinion of educational services (e.g., special education, 504-plan) for my child diagnosed with ADHD. ()	
I have a favorable opinion of educational services (e.g., special education, 504-plan)recommended by an appropriately licensed professional for my child diagnosed with ADHD. ()	

End of Block: Treatment Favorability

Start of Block: Completion Code

Q113 Thank you for participating in our survey. Here is your completion code: CF4VI44X

End of Block: Completion Code

Appendix E. Data Analysis for Mediation Analysis

Preparation

Load Packages

```
library(readxl)
library(tidyverse)
library(naniar)
library(psych)
library(furniture)
library(lavaan)
library(tinytex)
```

Load Data

Data loaded from excel file exported by Qualtrics. Excel gives to rows worth of column names, so the first row was saved in Chunk1 as var.names. Then it was re-added to the data set as the column names in Chunk2.

```
var_names <- readxl::read_excel("Diss10.8.23.xlsx",
                                col_names = FALSE,
                                range = "A1:EH1") %>%
  unlist(use.names = FALSE)

data_raw <- readxl::read_excel("Diss10.8.23.xlsx",
                               skip = 4,
                               col_names = FALSE) %>%
  dplyr::rename_with( ~ tolower(var_names))
```

Data Cleaning

Rename Variables

Data variable names created.

```
df_all <- data_raw %>%
  tibble::rowid_to_column(var = "id") %>%
  janitor::clean_names() %>%
  dplyr::rename(prolificid = q112,
                parent =s1,
                childADHD = q94,
                diagnos_prof = q106,
                diagnos_prof_other = q106_4_text,
                child_age = q100,
                parent_age = s2,
                speak_eng = q95,
                read_eng = s3,
                reside_US = s4,
                state = s5,
                consent = q115,
                parent_race = p1,
                parent_gender = p2,
```

```
                parent_income = p3,
                parent_employ = p4,
                num_chil = p5,
                school_chil = p6,
                child_age_diag = q97,
                child_current_serve = q98,
                child_current_serve_other = q98_5_text,
                child_past_serve = q99,
                child_past_serve_other = q99_5_text,
                child_adddx = c1,
                child_adddx_desc = q21,
                child_adddx_other = q21_7_text,
                child_sped = q22,
                child_sped_cat = q23,
                child_grade = q24,
                child_retain = q25,
                child_gender = q27,
                child_race = q28,
                child_race_other = q28_10_text,
                adhdsymp = q101,
                kadds1 = q55,
                kadds2 = q56,
                kadds3 = q57,
                kadds4 = q58,
                kadds5 = q59,
                kadds6 = q60,
                kadds7 = q61,
                kadds8 = q62,
                kadds9 = q63,
                kadds10 = q64,
                kadds11 = q65,
                kadds12 = q66,
                kadds13 = q67,
                kadds14 = q68,
                kadds15 = q69,
                kadds16 = q70,
                kadds17 = q71,
                kadds18 = q72,
                kadds19 = q73,
                kadds20 = q74,
                kadds21 = q75,
                kadds22 = q76,
                kadds23 = q77,
                kadds24 = q78,
                kadds25 = q79,
                kadds26 = q80,
                kadds27 = q81,
                kadds28 = q82,
                kadds29 = q83,
                kadds30 = q84,
```

```
                kadds31 = q85,
                kadds32 = q86,
                kadds33 = q87,
                kadds34 = q88,
                kadds35 = q89,
                kadds36 = q90,
                kadds37 = q91,
                kadds38 = q92,
                kadds39 = q93,
                ac1 = q110,
                asq1 = as1,
                asq2 = q30,
                asq3 = q31,
                asq4 = q32,
                asq5 = q33,
                asq6 = q34,
                asq7 = q35,
                asq8 = q36,
                asq9 = q37,
                asq10 = q38,
                asq11 = q39,
                asq12 = q40,
                asq13 = q41,
                asq14 = q42,
                asq15 = q43,
                asq16 = q44,
                asq17 = q45,
                asq18 = q46,
                asq19 = q47,
                asq20 = q48,
                asq21 = q49,
                asq22 = q50,
                asq23 = q51,
                asq24 = q52,
                asq25 = q53,
                asq26 = q54,
                ac2 = q111,
                fav_child_overall = q3_1,
                fav_pers_overall = q3_2,
                fav_int_overall = q3_3,
                fav_child_pharm = q102_1,
                fav_pers_pharm = q102_2,
                fav_rec_pharm = q102_3,
                fav_child_psy = q03_1,
                fav_pers_psy = q03_2,
                fav_rec_psy = q03_3,
                fav_child_pmt = q104_1,
                fav_pers_pmt = q104_2,
                fav_rec_pmt = q104_3,
                fav_child_ed = q105_1,
```

```
                fav_pers_ed = q105_2,
                fav_rec_ed = q105_3)
```

Collapse "Select all that apply" options

Expanded "select all that apply" variables to create variables suitable for frequency and count actions, including parent race, child race, ADHD symptoms, child past and current services, additional diagnoses, and special education categories. A count variable was created for ADHD symptoms to evaluate how many symptoms parents endorsed for their child. Character variables were mutated to factor or numeric types as appropriate.

```
df_cat <- df_all %>%
  dplyr::mutate(parent_race_cat = case_when(parent_race == "Biracial" ~
"Multiracial",
                                            stringr::str_detect(parent_
race,
                                                                pattern
= ",") == FALSE ~ parent_race,
                                            parent_race == "Other, plea
se describe:" ~ "Other",
                                            stringr::str_detect(parent_
race,
                                                                pattern
= ",") == TRUE ~ "Multiracial")) %>%
  dplyr::mutate(parent_white = case_when(parent_race == "White" ~ "Yes"
,
                                         parent_race != "White" ~ "No")
) %>%
  dplyr::mutate(child_race_cat = case_when(child_race == "Biracial" ~ "
Multiracial",
                                           stringr::str_detect(child_r
ace,
                                                               pattern
= ",") == FALSE ~ child_race,
                                           child_race == "Other, pleas
e describe:" ~ "Other",
                                           stringr::str_detect(child_r
ace,
                                                               pattern
= ",") == TRUE ~ "Multiracial")) %>%
  dplyr::mutate(child_white = case_when(child_race == "White" ~ "Yes",
                                        child_race != "White" ~ "No"))
%>%
  dplyr::mutate(across(c(parent_race,
                         parent_race_cat,
                         parent_white,
                         child_race,
                         child_race_cat,
                         child_race_other,
                         child_white,
```

```
                          child_age,
                          parent,
                          childADHD,
                          diagnos_prof,
                          speak_eng,
                          read_eng,
                          reside_US,
                          state,
                          parent_gender,
                          parent_employ,
                          num_chil,
                          school_chil,
                          child_sped,
                          child_grade,
                          child_retain,
                          child_gender),
                        ~ forcats::fct_infreq(factor(.x)))) %>%
  dplyr::mutate(child_current_serve_bic = child_current_serve %>%
                  stringr::str_detect(pattern = "Behavior intervention
or counseling")) %>%
  dplyr::mutate(child_current_serve_bic = ifelse(id == 90, TRUE, child_
current_serve_bic)) %>%
  dplyr::mutate(child_current_serve_eds = child_current_serve %>%
                  stringr::str_detect(pattern = "Educational support"))
%>%
  dplyr::mutate(child_current_serve_med = child_current_serve %>%
                  stringr::str_detect(pattern = "Medication")) %>%
  dplyr::mutate(child_current_serve_pmt = child_current_serve %>%
                  stringr::str_detect(pattern = "Parent training")) %>%
  dplyr::mutate(child_current_serve_none = case_when(id %in% c(65, 329,
502, 505) ~ TRUE,
                                                     is.na(child_curren
t_serve) ~ TRUE,
                                                     !is.na(child_curre
nt_serve) ~ FALSE)) %>%
  dplyr::mutate(across(c(child_current_serve_bic,
                          child_current_serve_eds,
                          child_current_serve_med,
                          child_current_serve_pmt),
                        ~ ifelse(child_current_serve_none == TRUE, FALSE
, .x))) %>%
  dplyr::mutate(child_past_serve_bic = child_past_serve %>%
                  stringr::str_detect(pattern = "Behavior intervention
or counseling")) %>%
  dplyr::mutate(child_past_serve_bic = ifelse(id == 90, TRUE, child_pas
t_serve_bic)) %>%
  dplyr::mutate(child_past_serve_eds = child_past_serve %>%
                  stringr::str_detect(pattern = "Educational support"))
%>%
  dplyr::mutate(child_past_serve_med = child_past_serve %>%
```

```
                  stringr::str_detect(pattern = "Medication")) %>%
  dplyr::mutate(child_past_serve_pmt = child_past_serve %>%
                  stringr::str_detect(pattern = "Parent training")) %>%
  dplyr::mutate(child_past_serve_none = case_when(id %in% c(184) ~ TRUE
,
                                                  is.na(child_past_s
erve) ~ TRUE,
                                                  !is.na(child_past_
serve) ~ FALSE)) %>%

  dplyr::mutate(across(c(child_past_serve_bic,
                         child_past_serve_eds,
                         child_past_serve_med,
                         child_past_serve_pmt),
                       ~ ifelse(child_past_serve_none == TRUE, FALSE, .
x))) %>%
  dplyr::mutate(child_adddx_anx = child_adddx_desc %>%
                  stringr::str_detect(pattern = "Anxiety")) %>%
  dplyr::mutate(child_adddx_anx = ifelse(id == 362, TRUE, child_adddx_a
nx)) %>%
  dplyr::mutate(child_adddx_asd = child_adddx_desc %>%
                  stringr::str_detect(pattern = "Autism")) %>%
  dplyr::mutate(child_adddx_cd = child_adddx_desc %>%
                  stringr::str_detect(pattern = "Conduct Disorder")) %>
%
  dplyr::mutate(child_adddx_mdd = child_adddx_desc %>%
                  stringr::str_detect(pattern = "Depression")) %>%
  dplyr::mutate(child_adddx_odd = child_adddx_desc %>%
                  stringr::str_detect(pattern = "Oppositional Defiant D
isorder")) %>%
  dplyr::mutate(child_adddx_sld = child_adddx_desc %>%
                  stringr::str_detect(pattern = "Specific Learning Diso
rder")) %>%
  dplyr::mutate(child_adddx_oth = ifelse(id %in% c(55, 85, 200, 295, 38
7), TRUE, FALSE)) %>%
  dplyr::mutate(child_adddx_oth_text = ifelse(id %in% c(55, 85, 200, 29
5, 387),
                                              child_adddx_other,
                                              NA)) %>%
  dplyr::mutate(child_adddx_any = furniture::rowsums(child_adddx_anx, c
hild_adddx_asd, child_adddx_cd,
                                                     child_adddx_mdd, c
hild_adddx_odd, child_adddx_sld,
                                                     child_adddx_oth) >
0) %>%
  dplyr::mutate(child_adddx_any = ifelse(is.na(child_adddx_any) & child
_adddx == "No", FALSE, TRUE)) %>%
  dplyr::mutate(across(c(child_adddx_anx, child_adddx_asd, child_adddx_
cd,
                         child_adddx_mdd, child_adddx_odd, child_adddx_
```

```
sld,
                          child_adddx_oth),
                        ~ ifelse(is.na(.x) & child_adddx_any == FALSE, F
ALSE, .x))) %>%
  dplyr::mutate(adhdsymp_effort = adhdsymp %>%
                  stringr::str_detect(pattern = "Avoids or is reluctant
to do things that require sustained mental effort")) %>%
  dplyr::mutate(adhdsymp_quiet = adhdsymp %>%
                  stringr::str_detect(pattern = "Cannot play quietly"))
%>%
  dplyr::mutate(adhdsymp_comp = adhdsymp %>%
                  stringr::str_detect(pattern = "Does not follow throug
h or fails to finish tasks")) %>%
  dplyr::mutate(adhdsymp_listen = adhdsymp %>%
                  stringr::str_detect(pattern = "Does not seem to liste
n when spoken to directly")) %>%
  dplyr::mutate(adhdsymp_distr = adhdsymp %>%
                  stringr::str_detect(pattern = "Easily distracted")) %
>%
  dplyr::mutate(adhdsymp_mist = adhdsymp %>%
                  stringr::str_detect(pattern = "Fails to pay close att
ention to details or makes careless mistakes")) %>%
  dplyr::mutate(adhdsymp_fidg = adhdsymp %>%
                  stringr::str_detect(pattern = "Fidgets or squirms in
seat")) %>%
  dplyr::mutate(adhdsymp_forget = adhdsymp %>%
                  stringr::str_detect(pattern = "Forgetful")) %>%
  dplyr::mutate(adhdsymp_org = adhdsymp %>%
                  stringr::str_detect(pattern = "Has difficulty organiz
ing tasks (e.g., poor time management, doesn't meet deadlines)")) %>%
  dplyr::mutate(adhdsymp_susatt = adhdsymp %>%
                  stringr::str_detect(pattern = "Has difficulty sustain
ing attention (i.e., can't remain focused)")) %>%
  dplyr::mutate(adhdsymp_mov = adhdsymp %>%
                  stringr::str_detect(pattern = "Is always moving")) %>
%
  dplyr::mutate(adhdsymp_lose = adhdsymp %>%
                  stringr::str_detect(pattern = "Loses things necessary
to complete tasks or activities")) %>%
  dplyr::mutate(adhdsymp_run = adhdsymp %>%
                  stringr::str_detect(pattern = "Runs around or climbs
when it is inappropriate to do so")) %>%
  dplyr::mutate(adhdsymp_talk = adhdsymp %>%
                  stringr::str_detect(pattern = "Talks too much")) %>%
  dplyr::mutate(adhdsymp_seat = adhdsymp %>%
                  stringr::str_detect(pattern = "Leaves seat when remai
ning seated is expected (e.g., gets up during class)")) %>%
  dplyr::mutate(adhdsymp_blurt = adhdsymp %>%
                  stringr::str_detect(pattern = "Blurts out an answer b
efore the question has been completed")) %>%
```

```
  dplyr::mutate(adhdsymp_wait = adhdsymp %>%
                  stringr::str_detect(pattern = "Has a hard time waitin
g their turn")) %>%
  dplyr::mutate(adhdsymp_int = adhdsymp %>%
                  stringr::str_detect(pattern = "Interrupts others")) %
>%
  dplyr::mutate(adhdsymp_total = furniture::rowsums(adhdsymp_effort, ad
hdsymp_quiet, adhdsymp_comp, adhdsymp_listen, adhdsymp_distr,
                                                    adhdsymp_mist, adhd
symp_fidg, adhdsymp_forget, adhdsymp_org, adhdsymp_susatt, adhdsymp_mov
,
                                                    adhdsymp_lose, adhd
symp_run, adhdsymp_talk, adhdsymp_seat, adhdsymp_blurt, adhdsymp_wait,
                                                    adhdsymp_int)) %>%
  dplyr::mutate(child_sped_cat_au = child_sped_cat %>%
                  stringr::str_detect(pattern = "Autism")) %>%
  dplyr::mutate(child_sped_cat_ed = child_sped_cat %>%
                  stringr::str_detect(pattern = "Emotional Disturbance"
)) %>%
  dplyr::mutate(child_sped_cat_id = child_sped_cat %>%
                  stringr::str_detect(pattern = "Intellectual Disabilit
y")) %>%
  dplyr::mutate(child_sped_cat_md = child_sped_cat %>%
                  stringr::str_detect(pattern = "Multiple Disabilities"
)) %>%
  dplyr::mutate(child_sped_cat_sld = child_sped_cat %>%
                  stringr::str_detect(pattern = "Specific Learning Diso
rder")) %>%
  dplyr::mutate(child_sped_cat_sli = child_sped_cat %>%
                  stringr::str_detect(pattern = "Speech Language Impair
ment")) %>%
  dplyr::mutate(child_sped_cat_oi = child_sped_cat %>%
                  stringr::str_detect(pattern = "Orthopedic Impairment"
)) %>%
  dplyr::mutate(child_sped_cat_ohi = child_sped_cat %>%
                  stringr::str_detect(pattern = "Other Health Impairmen
t")) %>%
  dplyr::mutate(child_sped_cat_hi = child_sped_cat %>%
                  stringr::str_detect(pattern = "Hearing Impairment"))
%>%
  dplyr::mutate(child_sped_cat_deaf = child_sped_cat %>%
                  stringr::str_detect(pattern = "Deafness")) %>%
  dplyr::mutate(across(c(child_current_serve_bic,
                         child_current_serve_eds,
                         child_current_serve_med,
                         child_current_serve_pmt,
                         child_current_serve_none,
                         child_past_serve_bic,
                         child_past_serve_eds,
                         child_past_serve_med,
```

```
                        child_past_serve_pmt,
                        child_past_serve_none,
                        child_adddx_any,
                        child_adddx_anx,
                        child_adddx_asd,
                        child_adddx_cd,
                        child_adddx_mdd,
                        child_adddx_odd,
                        child_adddx_sld,
                        child_adddx_oth,
                        adhdsymp_effort,
                        adhdsymp_quiet,
                        adhdsymp_comp,
                        adhdsymp_listen,
                        adhdsymp_distr,
                        adhdsymp_mist,
                        adhdsymp_fidg,
                        adhdsymp_forget,
                        adhdsymp_org,
                        adhdsymp_susatt,
                        adhdsymp_mov,
                        adhdsymp_lose,
                        adhdsymp_run,
                        adhdsymp_talk,
                        adhdsymp_seat,
                        adhdsymp_blurt,
                        adhdsymp_wait,
                        adhdsymp_int,
                        child_sped_cat_deaf,
                        child_sped_cat_hi,
                        child_sped_cat_ohi,
                        child_sped_cat_oi,
                        child_sped_cat_sli,
                        child_sped_cat_sld,
                        child_sped_cat_md,
                        child_sped_cat_id,
                        child_sped_cat_ed,
                        child_sped_cat_au),
                    ~ factor(.x,
                             levels = c(FALSE, TRUE),
                             labels = c("No", "Yes")))) %>%
  dplyr::mutate(parent_income = stringr::str_remove_all(parent_income,
pattern = "\\$")) %>%
  dplyr::mutate(parent_income = stringr::str_remove_all(parent_income,
pattern = ",")) %>%
  dplyr::mutate(across(c(parent_income,
                         child_age_diag), as.numeric))
```

Measure Scoring

Outcome measures were transformed to numeric variable type and scored. The KADDS uses a total correct algorithm. Incorrect and "Don't Know" answers were not given credit. In the case of items left unanswered, if the number of unanswered items was less than 2 for the whole measure, the item was scored as incorrect. Participants missing more than 2 items on the KADDS were not given a total score.

For additional information on prorating scores see: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4701045/ or https://leehw.com/crib-sheets/prorating/

The ASQ uses a 4-point Likert response format. The measure is scored by averaging responses on the 26 items. Higher scores indicate greater ADHD stigma (Kellison et al., 2010).

Created favorability averages for general ratings (across overall for children, overall for their child, and overall when recommended by a provider) and for each of the intervention domains (e.g., medication, behavior therapy, parent training, and educational interventions).

```
kadds_items_false <- paste0("kadds", c(1, 2, 7, 11, 12, 14, 18, 19,
                                       22, 23, 24, 27, 28, 29, 30,
                                       34, 35, 36, 37, 38,  39))
kadds_items_true <- paste0("kadds", c(3, 4, 5, 6, 8, 9, 10, 13, 15,
                                      16, 17, 20, 21, 25, 26, 31, 32, 3
3))

asq_items <- paste0("asq", 1:26)

df_scored <- df_cat %>%
  dplyr::mutate(across(starts_with("kadds"),
                       ~is.na(.x),
                       .names = "{col}_na")) %>%
  dplyr::mutate(across(all_of(kadds_items_false),
                       ~ .x == "False",
                       .names = "{col}_correct")) %>%
  dplyr::mutate(across(all_of(kadds_items_true),
                       ~ .x == "True",
                       .names = "{col}_correct")) %>%
  dplyr::mutate(across(paste0("kadds", 1:39, "_correct"), as.numeric))
%>%
  dplyr::mutate(kadds_nas = furniture::rowsums(!!! rlang::syms(paste0("
kadds", 1:39, "_na")))) %>%
  dplyr::mutate(kadds_tot = furniture::rowsums(!!! rlang::syms(paste0("
kadds", 1:39, "_correct")),
                                               na.rm = TRUE)) %>%
  dplyr::mutate(kadds_tot = ifelse(kadds_nas > 2, NA, kadds_tot)) %>%
  dplyr::mutate(across(starts_with("fav_"), as.numeric)) %>%
  dplyr::mutate(fav_overall_avg = furniture::rowmeans(fav_child_overall
, fav_pers_overall, fav_int_overall)) %>%
```

```
  dplyr::mutate(fav_pharm_avg = furniture::rowmeans(fav_child_pharm, fa
v_pers_pharm, fav_rec_pharm)) %>%
  dplyr::mutate(fav_psy_avg = furniture::rowmeans(fav_child_psy, fav_pe
rs_psy, fav_rec_psy)) %>%
  dplyr::mutate(fav_pmt_avg = furniture::rowmeans(fav_child_pmt, fav_pe
rs_pmt, fav_rec_pmt)) %>%
  dplyr::mutate(fav_ed_avg = furniture::rowmeans(fav_child_ed, fav_pers
_ed, fav_rec_ed)) %>%
  dplyr::mutate(across(all_of(asq_items),
                       ~ case_when(.x == "Strongly Disagree" ~ 1,
                                   .x == "Disagree" ~ 2,
                                   .x == "Agree" ~ 3,
                                   .x == "Strongly Agree" ~ 4))) %>%
  dplyr::mutate(asq_avg = furniture::rowmeans.n(!!! rlang::syms(asq_ite
ms), n = 25))
```

Save Prepared Dataset

Saved a version of the dataset with only needed variables, removing additional embedded data from Qualtrics and redundant variables previously mutated.

```
df_prep <- df_scored %>%
  dplyr::select(-ends_with("_other"),
                -startdate,
                -enddate,
                -status,
                -ipaddress,
                -progress,
                -duration_in_seconds,
                -finished,
                -recordeddate,
                -responseid,
                -recipientlastname,
                -recipientfirstname,
                -recipientemail,
                -externalreference,
                -locationlatitude,
                -locationlongitude,
                -distributionchannel,
                -userlanguage,
                -child_race_other,
                -child_current_serve_other,
                -child_past_serve_other,
                -child_adddx,
                -child_adddx_desc,
                -child_sped_cat) %>%
  dplyr::select(id,
                kadds_tot,
                fav_overall_avg,
                fav_pharm_avg,
```

```
                fav_psy_avg,
                fav_pmt_avg,
                fav_ed_avg,
                asq_avg,
                everything())
```

Screen Out Participants

535 Prolific members started the survey. Of these, 297 met inclusion criteria and consented to participate in the survey. An additional 31 were removed due to failed attention check questions. This leaves a sample of 266 participants.

```
df_inc <- df_prep %>%
  dplyr::filter(consent == "I agree",
                ac1 == "Plane",
                ac2 == "Agree")
```

Comparing Excluded Participants

Of the 238 who did not meet inclusion criteria, 43 (18.1%) were not parents, 29 (12.2%) indicated they did not have a child with ADHD, 131 had a child outside of the stated age range (5-18 years), 8 reported they did not read English fluently, and 1 reported not residing in the United States. 4 more excluded participants, though initially endorsing that their child had ADHD stated they did not have a child diagnosed with ADHD and were excluded. 29 additional participants were not screened out but exited the survey prior to providing consent.

```
df_exc <- df_prep %>%
  dplyr::filter(is.na(consent))

df_exc %>%
  dplyr::select(parent,
                childADHD,
                diagnos_prof,
                child_age,
                parent_age,
                speak_eng,
                read_eng,
                reside_US) %>%
  furniture::table1(na.rm = FALSE)


_____________________________________________________________________________
                                                    Mean/Count (SD/%)
                                                    n = 238
 parent
    Yes                                             195 (81.9%)
    No                                              43 (18.1%)
    NA                                              0 (0%)
 childADHD
```

Yes	163 (68.5%)
No	29 (12.2%)
NA	46 (19.3%)
diagnos_prof	
A pediatrician	66 (27.7%)
A psychiatrist	56 (23.5%)
A psychologist	28 (11.8%)
Other, please describe:	9 (3.8%)
My child has not been diagnosed with ADHD	4 (1.7%)
NA	75 (31.5%)
child_age	
19 years or older	101 (42.4%)
6	2 (0.8%)
7	4 (1.7%)
8	1 (0.4%)
10	6 (2.5%)
5	2 (0.8%)
Younger than 4 years old	30 (12.6%)
9	4 (1.7%)
12	0 (0%)
16	4 (1.7%)
17	2 (0.8%)
13	0 (0%)
11	1 (0.4%)
14	0 (0%)
18	1 (0.4%)
15	1 (0.4%)
NA	79 (33.2%)
parent_age	
	25.3 (15.3)
speak_eng	
Yes	14 (5.9%)
NA	224 (94.1%)
read_eng	
Yes	4 (1.7%)
No	8 (3.4%)
NA	226 (95%)
reside_US	
Yes	1 (0.4%)
No	1 (0.4%)
NA	236 (99.2%)

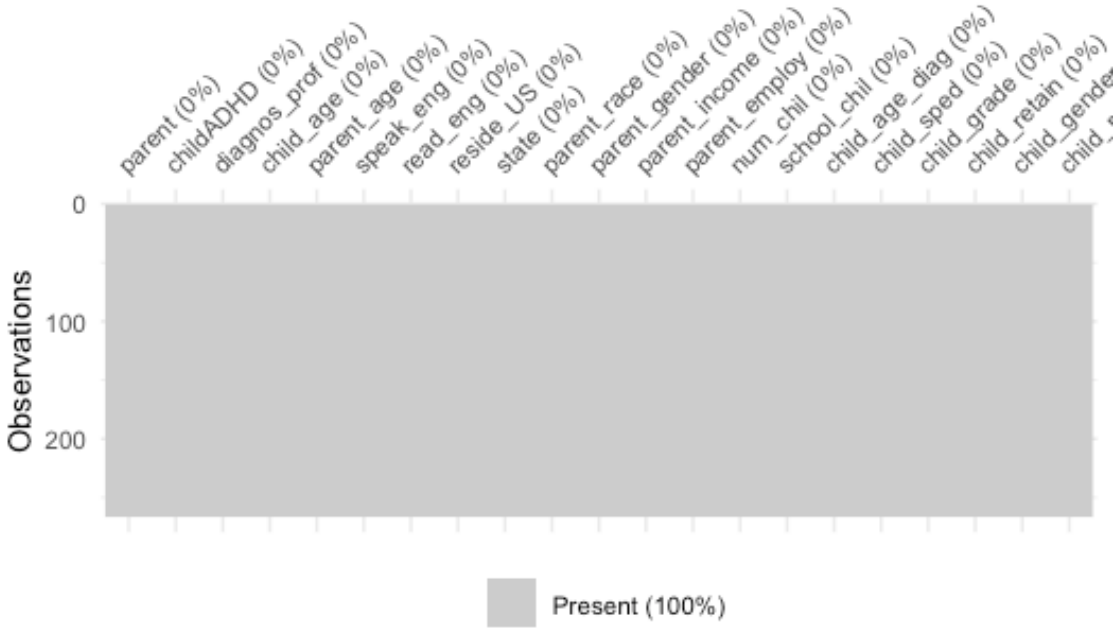
Missing Data

Each subset of questions (demographics, covariates, and measure scores) were analysed for missingness and potential patterns of missingness prior to data analysis.

Demographics

No missingness was evident in demographic responses.

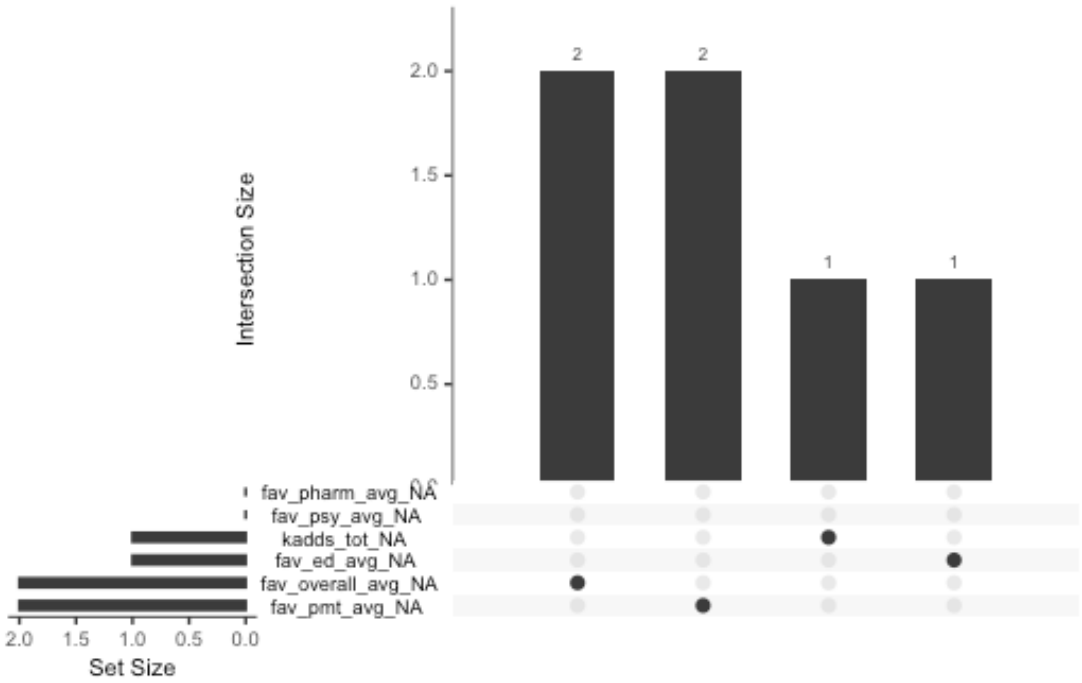
```
df_inc %>%
  dplyr::select(parent:child_race) %>%
  dplyr::select_if(function(x)  !is.character(x)) %>%
  naniar::vis_miss()
```



Measure Scores

Overall, there is minimal missingness in measure scores. Participants missing 1 score did not have a discernible pattern of missingness across measures.

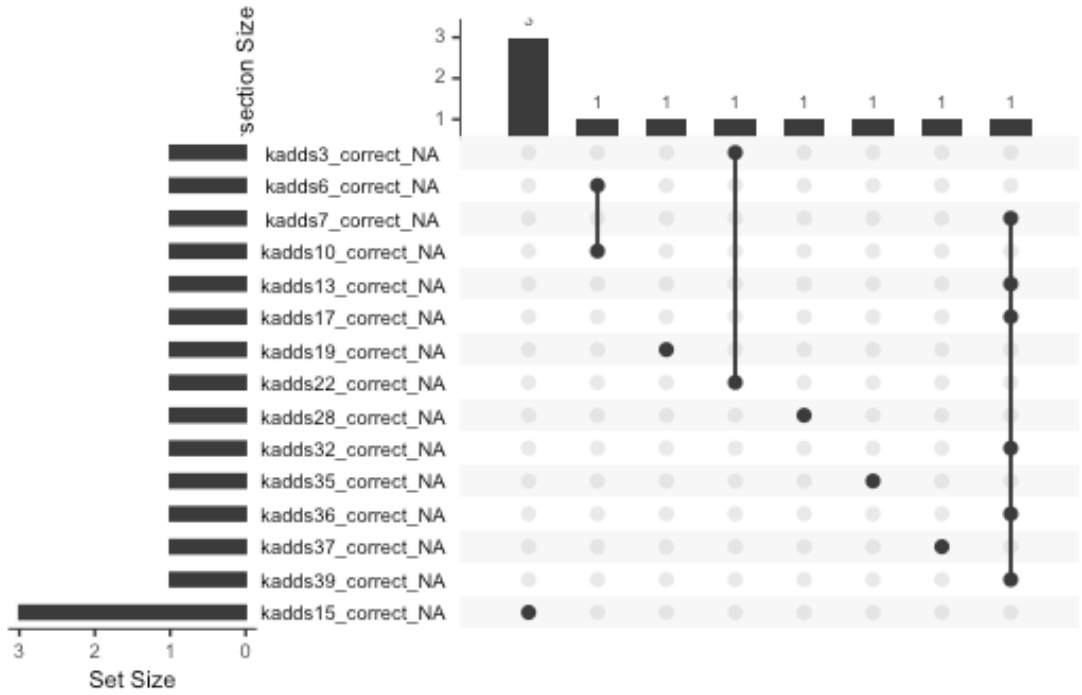
```
df_inc %>%
  dplyr::select(ends_with("_tot"), ends_with("_avg")) %>%
  naniar::gg_miss_upset(nsets = 20)
```



KADDS Items

10 participants had some degree of missingness in their KADDS responses. The majority of these were missing one item. 3 participants were missing 2 or more items. The 10 participants with KADDS missingness do not overlap with systemamtic missingness in other domains.

```
df_inc %>%
  dplyr::select(kadds_tot, paste0("kadds", 1:39, "_correct")) %>%
  naniar::gg_miss_upset(nsets = 15,
                        keep.order = TRUE,
                        mb.ratio = c(.2, .8))
```

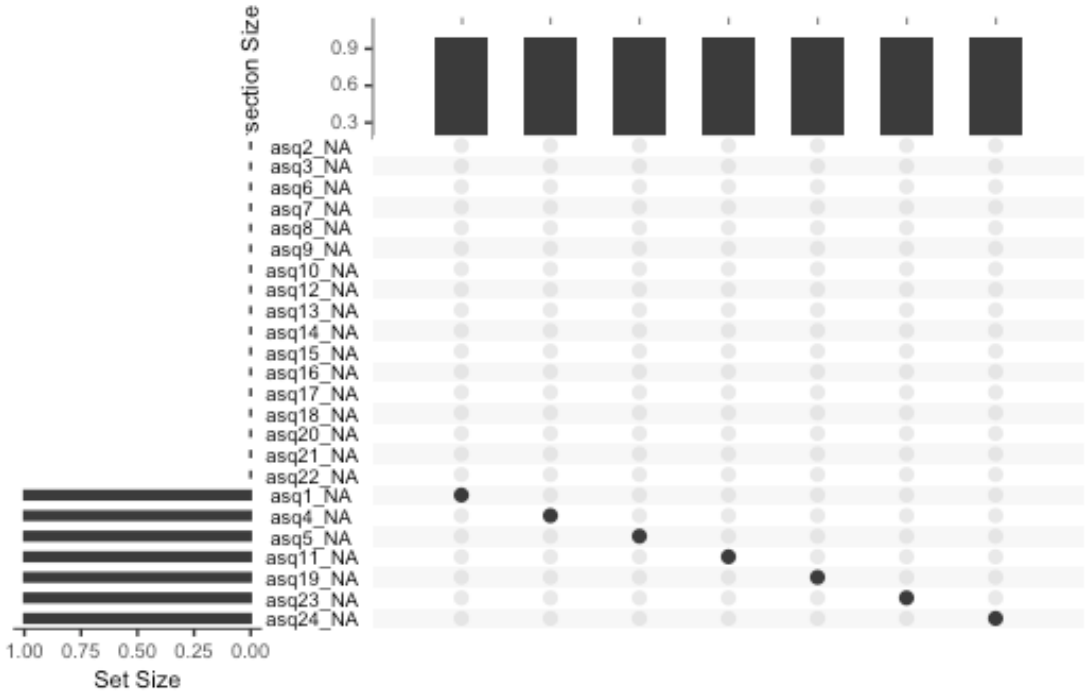



```
df_inc %>%
  dplyr::select(id, ends_with("_correct")) %>%
  dplyr::filter(!complete.cases(.))

# A tibble: 10 × 40
      id kadds1_correct kadds2_correct kadds7_correct kadds11_correct
   <int>          <dbl>          <dbl>          <dbl>           <dbl>
 1    75              0              1              0               0
 2    97              0              1              1               0
 3   111              0              0              0               0
 4   130              0              0              0               0
 5   172              0              1             NA               0
 6   319              0              0              0               0
 7   338              0              1              1               0
 8   384              0              1              1               0
 9   388              0              0              0               0
10   397              0              0              0               1
# ℹ 35 more variables: kadds12_correct <dbl>, kadds14_correct <dbl>,
#   kadds18_correct <dbl>, kadds19_correct <dbl>, kadds22_correct <dbl>
,
#   kadds23_correct <dbl>, kadds24_correct <dbl>, kadds27_correct <dbl>
,
#   kadds28_correct <dbl>, kadds29_correct <dbl>, kadds30_correct <dbl>
,
#   kadds34_correct <dbl>, kadds35_correct <dbl>, kadds36_correct <dbl>
,
#   kadds37_correct <dbl>, kadds38_correct <dbl>, kadds39_correct <dbl>
,
#   kadds3_correct <dbl>, kadds4_correct <dbl>, kadds5_correct <dbl>, …
```

ASQ Items

7 participants had some degree of missingness in their ASQ responses. All of these were missing only one item. The participants with ASQ missingness do not overlap with systemamtic missingness in other domains.

```
df_inc %>%
  dplyr::select(asq_items) %>%
  naniar::gg_miss_upset(nsets = 100,
                        keep.order = TRUE,
                        mb.ratio = c(.2, .8))
```



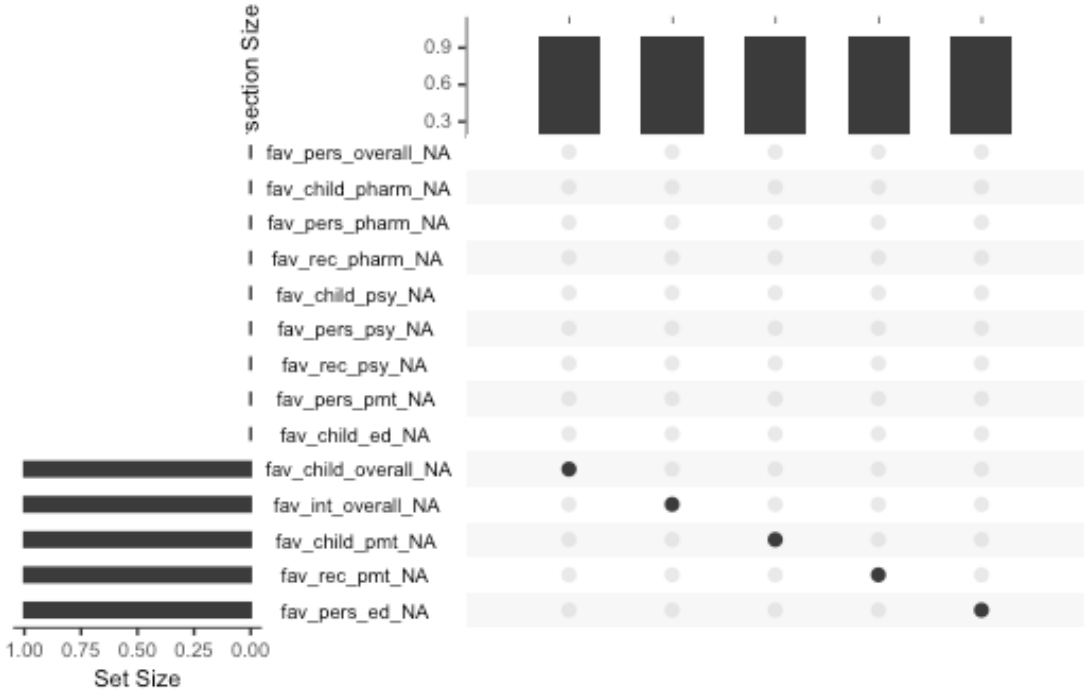

```
df_inc %>%
  dplyr::select(id, starts_with("asq")) %>%
  dplyr::select(-contains("avg")) %>%
   dplyr::filter(!complete.cases(.))

# A tibble: 7 × 27
     id  asq1  asq2  asq3  asq4  asq5  asq6  asq7  asq8  asq9 asq10 asq
11 asq12
  <int> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <db
l> <dbl>
1    93     3     4     3    NA     3     4     2     4     3     2
2     2
2   169     3     3     2     1     3     3     2     3     3     2
3     2
3   198    NA     3     3     1     3     3     3     3     3     3
3     2
4   347     4     3     4     3     3     3     3     3     2     1
```

```
NA     1
5   351     3     3     4     2     3     3     4     3     3     4
3     3
6   445     3     3     3     2    NA     3     3     3     3     3
3     3
7   454     3     2     3     2     3     3     3     3     3     2
3     3
# ℹ 14 more variables: asq13 <dbl>, asq14 <dbl>, asq15 <dbl>, asq16 <db
l>,
#   asq17 <dbl>, asq18 <dbl>, asq19 <dbl>, asq20 <dbl>, asq21 <dbl>,
#   asq22 <dbl>, asq23 <dbl>, asq24 <dbl>, asq25 <dbl>, asq26 <dbl>
```

Favorability Ratings

5 participants had some degree of missingness in their favorability rating responses. All of these were missing only one item. The participants with favorability rating missingness do not overlap with systemamtic missingness in other domains. Due to the limited number of ratings, no proration or mathematical adjustment was made to rating averages to account for missingness. Use of SEM path analysis instead of multiple imputations PROCESS is supported.

```
df_inc %>%
  dplyr::select(starts_with("fav_")) %>%
  dplyr::select(-contains("avg")) %>%
  naniar::gg_miss_upset(nsets = 100,
                        keep.order = TRUE,
                        mb.ratio = c(.2, .8))
```



```
df_inc %>%
  dplyr::select(id, starts_with("fav_")) %>%
  dplyr::select(-contains("avg")) %>%
   dplyr::filter(!complete.cases(.))

# A tibble: 5 × 16
     id fav_child_overall fav_pers_overall fav_int_overall fav_child_ph
arm
  <int>             <dbl>            <dbl>           <dbl>           <d
bl>
1   146                NA               86              79
58
2   218                70               80              80
75
3   221                50               48              NA
59
4   252                80               90              80
80
5   458                61               71              58
71
# ℹ 11 more variables: fav_pers_pharm <dbl>, fav_rec_pharm <dbl>,
#   fav_child_psy <dbl>, fav_pers_psy <dbl>, fav_rec_psy <dbl>,
#   fav_child_pmt <dbl>, fav_pers_pmt <dbl>, fav_rec_pmt <dbl>,
#   fav_child_ed <dbl>, fav_pers_ed <dbl>, fav_rec_ed <dbl>
```

Covariates and Other Responses

No missingness was evident in covariate responses.

```
df_inc %>%
  dplyr::select(id,
                child_current_serve_bic:child_adddx_oth,
                child_adddx_any:adhdsymp_int) %>%
  tidyr::pivot_longer(cols = -id,
                      names_to = "variable") %>%
  dplyr::group_by(variable, value) %>%
  dplyr::tally() %>%
  dplyr::ungroup() %>%
  tidyr::pivot_wider(names_from = value,
                     values_from = n) %>%
  dplyr::mutate(num_valid = furniture::rowsums.n(No, Yes, n = 1)) %>%
  dplyr::mutate(num_miss = 266 - num_valid) %>%
  pander::pander(caption = "Complete on Demo?")
```

Complete on Demo?

variable	No	Yes	num_valid	num_miss
adhdsymp_blurt	195	71	266	0
adhdsymp_comp	145	121	266	0
adhdsymp_distr	59	207	266	0

variable	No	Yes	num_valid	num_miss
adhdsymp_effort	167	99	266	0
adhdsymp_fidg	123	143	266	0
adhdsymp_forget	168	98	266	0
adhdsymp_int	147	119	266	0
adhdsymp_listen	165	101	266	0
adhdsymp_lose	187	79	266	0
adhdsymp_mist	120	146	266	0
adhdsymp_mov	136	130	266	0
adhdsymp_org	266	NA	266	0
adhdsymp_quiet	206	60	266	0
adhdsymp_run	199	67	266	0
adhdsymp_seat	266	NA	266	0
adhdsymp_susatt	266	NA	266	0
adhdsymp_talk	189	77	266	0
adhdsymp_wait	160	106	266	0
child_adddx_anx	189	77	266	0
child_adddx_any	46	220	266	0
child_adddx_asd	228	38	266	0
child_adddx_cd	247	19	266	0
child_adddx_mdd	243	23	266	0
child_adddx_odd	251	15	266	0
child_adddx_oth	261	5	266	0
child_adddx_sld	225	41	266	0
child_current_serve_bic	121	145	266	0
child_current_serve_eds	130	136	266	0
child_current_serve_med	129	137	266	0
child_current_serve_none	261	5	266	0
child_current_serve_pmt	182	84	266	0
child_past_serve_bic	114	152	266	0
child_past_serve_eds	130	136	266	0
child_past_serve_med	131	135	266	0
child_past_serve_none	262	4	266	0
child_past_serve_pmt	171	95	266	0

Descriptives and Data Visualization

Parent Descriptive Statistics

Descriptive statistics were computed for parent participants, including means and standard deviations (SD) for age and income. Percentages and counts are provided for race, gender, employment status, and number of children in the household.

```
df_inc %>%
  dplyr::select(parent_age, parent_race_cat, parent_gender, parent_inco
me, parent_employ, num_chil) %>%
  furniture::table1()
```

```
_____________________________________________________________________

                                                    Mean/Count (SD/%)
                                                    n = 266
 parent_age
                                                    42.1 (12.4)
 parent_race_cat
    White                                           177 (66.5%)
    Black or African American                       41 (15.4%)
    Latino/a/x or Hispanic                          16 (6%)
    Asian or Asian American                         16 (6%)
    Multiracial                                     11 (4.1%)
    Native American                                 3 (1.1%)
    Other                                           1 (0.4%)
    Prefer not to respond                           1 (0.4%)
 parent_gender
    Female                                          131 (49.2%)
    Male                                            131 (49.2%)
    Nonbinary                                       2 (0.8%)
    Prefer not to respond                           2 (0.8%)
 parent_income
                                                    83228.9 (54172.3)
 parent_employ
    Employed full time (40 or more hours per week) 185 (69.5%)
    Employed part time (up to 39 hours per week)   41 (15.4%)
    Homemaker                                       18 (6.8%)
    Unemployed and looking for work                 13 (4.9%)
    Unemployed and not looking for work             5 (1.9%)
    Retired                                         3 (1.1%)
    Student                                         1 (0.4%)
 num_chil
    1                                               109 (41%)
    2                                               79 (29.7%)
    3                                               56 (21.1%)
    4                                               16 (6%)
    5                                               4 (1.5%)
    6 or more                                       2 (0.8%)
_____________________________________________________________________
```

Child Descriptive Statistics

Descriptive statistics were computed for the target child each parent repotred on, including means and standard deviations (SD) for age at diagnosis and number of ADHD symptoms endorsed. Percentages and counts are provided for diagnosing professional, child age, special education eligibility, grade, gender, race, additional diagnoses, and current and past services.

```
df_inc %>%
  dplyr::select(diagnos_prof,
                child_age,
                child_age_diag,
                child_sped,
                child_grade,
                child_retain,
                child_gender,
                child_race_cat,
                child_adddx_any,
                adhdsymp_total,
                child_current_serve_bic,
                child_current_serve_eds,
                child_current_serve_med,
                child_current_serve_pmt,
                child_current_serve_none,
                child_past_serve_bic,
                child_past_serve_eds,
                child_past_serve_med,
                child_past_serve_pmt,
                child_past_serve_none)%>%
  furniture::table1()
```

```
_____________________________________________________________________

                                                 Mean/Count (SD/%)
                                                 n = 266
 diagnos_prof
    A pediatrician                               127 (47.7%)
    A psychiatrist                               57 (21.4%)
    A psychologist                               79 (29.7%)
    Other, please describe:                      3 (1.1%)
    My child has not been diagnosed with ADHD    0 (0%)
 child_age
    19 years or older                            0 (0%)
    6                                            32 (12%)
    7                                            30 (11.3%)
    8                                            30 (11.3%)
    10                                           25 (9.4%)
    5                                            17 (6.4%)
    Younger than 4 years old                     0 (0%)
    9                                            21 (7.9%)
```

12	21 (7.9%)
16	18 (6.8%)
17	16 (6%)
13	17 (6.4%)
11	14 (5.3%)
14	12 (4.5%)
18	7 (2.6%)
15	6 (2.3%)
child_age_diag	
	7.4 (3.0)
child_sped	
No	163 (61.3%)
Yes	103 (38.7%)
child_grade	
2nd grade	33 (12.4%)
3rd grade	31 (11.7%)
1st grade	24 (9%)
4th grade	27 (10.2%)
6th grade	23 (8.6%)
Kindergarten	22 (8.3%)
5th grade	21 (7.9%)
11th grade (Junior)	20 (7.5%)
8th grade	18 (6.8%)
10th grade (Sophomore)	16 (6%)
12th grade (Senior)	13 (4.9%)
7th grade	9 (3.4%)
9th grade (Freshman)	9 (3.4%)
child_retain	
No	226 (85%)
Yes	40 (15%)
child_gender	
Male	197 (74.1%)
Female	66 (24.8%)
Prefer not to say	2 (0.8%)
Other	1 (0.4%)
child_race_cat	
White	169 (63.5%)
Black or African American	42 (15.8%)
Latino/a/x or Hispanic	21 (7.9%)
Asian or Asian American	16 (6%)
Multiracial	16 (6%)
Native American	2 (0.8%)
child_adddx_any	
No	46 (17.3%)
Yes	220 (82.7%)
adhdsymp_total	
	6.1 (3.6)
child_current_serve_bic	
No	121 (45.5%)
Yes	145 (54.5%)

```
child_current_serve_eds
   No                                                130 (48.9%)
   Yes                                               136 (51.1%)
child_current_serve_med
   No                                                129 (48.5%)
   Yes                                               137 (51.5%)
child_current_serve_pmt
   No                                                182 (68.4%)
   Yes                                               84 (31.6%)
child_current_serve_none
   No                                                261 (98.1%)
   Yes                                               5 (1.9%)
child_past_serve_bic
   No                                                114 (42.9%)
   Yes                                               152 (57.1%)
child_past_serve_eds
   No                                                130 (48.9%)
   Yes                                               136 (51.1%)
child_past_serve_med
   No                                                131 (49.2%)
   Yes                                               135 (50.8%)
child_past_serve_pmt
   No                                                171 (64.3%)
   Yes                                               95 (35.7%)
child_past_serve_none
   No                                                262 (98.5%)
   Yes                                               4 (1.5%)
_____________________________________________________________________________
```

Outcome Descriptives

Descriptive statistics were calculated for outcome measures, including the KADDS total score, favorability rating averages, and the ASQ score. Ranges and medians were also computed to evaluate spread of the data.

```
df_inc %>%
  dplyr::select(kadds_tot,
                fav_overall_avg,
                fav_pharm_avg,
                fav_psy_avg,
                fav_pmt_avg,
                fav_ed_avg,
                asq_avg,
                fav_child_overall,
                fav_pers_overall,
                fav_int_overall)%>%
  furniture::table1()


_____________________________________
```

```
                   Mean/Count (SD/%)
                   n = 260
 kadds_tot
                   20.7 (5.6)
 fav_overall_avg
                   67.9 (23.3)
 fav_pharm_avg
                   53.8 (29.3)
 fav_psy_avg
                   72.9 (22.0)
 fav_pmt_avg
                   72.1 (21.1)
 fav_ed_avg
                   68.7 (25.1)
 asq_avg
                   2.6 (0.5)
 fav_child_overall
                   67.5 (23.5)
 fav_pers_overall
                   67.1 (24.4)
 fav_int_overall
                   69.3 (24.3)
```

```
df_inc %>%
  dplyr::select(kadds_tot) %>%
  summary()

   kadds_tot
 Min.   : 2.00
 1st Qu.:18.00
 Median :21.00
 Mean   :20.77
 3rd Qu.:24.00
 Max.   :36.00
 NA's   :1

df_inc %>%
  dplyr::select(asq_avg) %>%
  summary()

    asq_avg
 Min.   :1.038
 1st Qu.:2.287
 Median :2.615
 Mean   :2.562
 3rd Qu.:2.885
 Max.   :3.808
```

```
df_inc %>%
  dplyr::select(starts_with("fav_")) %>%
  summary()

 fav_overall_avg  fav_pharm_avg     fav_psy_avg       fav_pmt_avg
 Min.   :  0.00   Min.   :  0.00   Min.   :  5.333   Min.   :  0.6667
 1st Qu.: 51.25   1st Qu.: 30.83   1st Qu.: 60.000   1st Qu.: 58.0000
 Median : 71.17   Median : 54.50   Median : 75.000   Median : 73.3333
 Mean   : 67.97   Mean   : 54.10   Mean   : 72.965   Mean   : 71.8788
 3rd Qu.: 86.67   3rd Qu.: 77.33   3rd Qu.: 90.917   3rd Qu.: 88.0833
 Max.   :100.00   Max.   :100.00   Max.   :100.000   Max.   :100.0000
 NA's   :2                                          NA's   :2
   fav_ed_avg     fav_child_overall fav_pers_overall fav_int_overall
 Min.   :  0.00   Min.   :  0.0     Min.   :  0.00   Min.   :  0.00
 1st Qu.: 50.67   1st Qu.: 50.0     1st Qu.: 50.00   1st Qu.: 54.00
 Median : 73.00   Median : 68.0     Median : 70.50   Median : 72.00
 Mean   : 68.73   Mean   : 67.4     Mean   : 67.14   Mean   : 69.33
 3rd Qu.: 90.00   3rd Qu.: 86.0     3rd Qu.: 86.00   3rd Qu.: 89.00
 Max.   :100.00   Max.   :100.0     Max.   :100.00   Max.   :100.00
 NA's   :1        NA's   :1                          NA's   :1
 fav_child_pharm  fav_pers_pharm  fav_rec_pharm    fav_child_psy
 Min.   :  0.00   Min.   :  0.0   Min.   :  0.00   Min.   : 14.00
 1st Qu.: 32.25   1st Qu.: 27.0   1st Qu.: 30.00   1st Qu.: 60.00
 Median : 55.00   Median : 52.0   Median : 55.00   Median : 75.00
 Mean   : 55.28   Mean   : 52.4   Mean   : 54.63   Mean   : 72.83
 3rd Qu.: 79.75   3rd Qu.: 78.0   3rd Qu.: 80.00   3rd Qu.: 92.00
 Max.   :100.00   Max.   :100.0   Max.   :100.00   Max.   :100.00

  fav_pers_psy     fav_rec_psy     fav_child_pmt     fav_pers_pmt
 Min.   :  0.00   Min.   :  0.00   Min.   :  2.00   Min.   :  0.00
 1st Qu.: 58.00   1st Qu.: 58.50   1st Qu.: 57.00   1st Qu.: 56.00
 Median : 75.00   Median : 77.50   Median : 73.00   Median : 74.00
 Mean   : 72.39   Mean   : 73.67   Mean   : 71.33   Mean   : 71.29
 3rd Qu.: 90.75   3rd Qu.: 92.75   3rd Qu.: 89.00   3rd Qu.: 89.75
 Max.   :100.00   Max.   :100.00   Max.   :100.00   Max.   :100.00
                                   NA's   :1
  fav_rec_pmt      fav_child_ed     fav_pers_ed       fav_rec_ed
 Min.   :  0.00   Min.   :  0.00   Min.   :  0.00   Min.   :  0.0
 1st Qu.: 60.00   1st Qu.: 53.00   1st Qu.: 50.00   1st Qu.: 50.0
 Median : 75.00   Median : 71.00   Median : 74.00   Median : 73.5
 Mean   : 73.13   Mean   : 68.59   Mean   : 68.45   Mean   : 69.2
 3rd Qu.: 91.00   3rd Qu.: 88.75   3rd Qu.: 91.00   3rd Qu.: 92.0
 Max.   :100.00   Max.   :100.00   Max.   :100.00   Max.   :100.0
 NA's   :1                         NA's   :1
```

Internal Consistency of Scored Measures

Internal consistency via Cronbachs alpha was computed for the KADDS, ASQ, and favorability ratings. The KADDS has acceptable internal consistency (a = .776), while

internal consistency for the ASQ (a = .954) and favorability ratings (a = .955) were very strong.

KADDS

```
df_inc %>%
  dplyr::select(ends_with("_correct")) %>%
  dplyr::mutate_all(as.numeric) %>%
  psych::alpha()
```

```
Some items ( kadds4_correct ) were negatively correlated with the first
principal component and
probably should be reversed.
To do this, run the function again with the 'check.keys=TRUE' option


Reliability analysis
Call: psych::alpha(x = .)

  raw_alpha std.alpha G6(smc) average_r S/N   ase mean   sd median_r
      0.78      0.78    0.83     0.082 3.5 0.019 0.53 0.14    0.078

    95% confidence boundaries
         lower alpha upper
Feldt     0.74  0.78  0.81
Duhachek  0.74  0.78  0.81

 Reliability if an item is dropped:
                raw_alpha std.alpha G6(smc) average_r S/N alpha se var.
r med.r
kadds1_correct       0.77      0.78    0.82     0.083 3.5    0.020 0.01
1 0.082
kadds2_correct       0.77      0.76    0.81     0.079 3.2    0.020 0.01
1 0.078
kadds7_correct       0.77      0.77    0.82     0.080 3.3    0.020 0.01
1 0.077
kadds11_correct      0.77      0.77    0.82     0.080 3.3    0.020 0.01
1 0.079
kadds12_correct      0.77      0.77    0.82     0.080 3.3    0.020 0.01
1 0.076
kadds14_correct      0.77      0.77    0.82     0.081 3.3    0.020 0.01
1 0.078
kadds18_correct      0.77      0.77    0.82     0.080 3.3    0.020 0.01
1 0.076
kadds19_correct      0.77      0.77    0.82     0.081 3.4    0.020 0.01
1 0.078
kadds22_correct      0.77      0.77    0.82     0.080 3.3    0.020 0.01
1 0.076
kadds23_correct      0.77      0.77    0.82     0.081 3.4    0.020 0.01
1 0.078
kadds24_correct      0.77      0.77    0.82     0.081 3.4    0.020 0.01
```

```
1 0.077
kadds27_correct      0.78      0.78    0.83     0.085 3.5    0.019 0.01
1 0.084
kadds28_correct      0.77      0.77    0.82     0.080 3.3    0.020 0.01
1 0.076
kadds29_correct      0.77      0.77    0.82     0.081 3.4    0.020 0.01
1 0.078
kadds30_correct      0.77      0.77    0.82     0.082 3.4    0.020 0.01
1 0.079
kadds34_correct      0.78      0.78    0.82     0.083 3.5    0.020 0.01
1 0.080
kadds35_correct      0.77      0.77    0.82     0.080 3.3    0.020 0.01
1 0.078
kadds36_correct      0.77      0.77    0.82     0.080 3.3    0.020 0.01
0 0.076
kadds37_correct      0.77      0.77    0.82     0.083 3.4    0.020 0.01
1 0.078
kadds38_correct      0.78      0.78    0.82     0.084 3.5    0.019 0.01
1 0.081
kadds39_correct      0.77      0.77    0.82     0.081 3.3    0.020 0.01
1 0.078
kadds3_correct       0.77      0.77    0.82     0.082 3.4    0.020 0.01
1 0.078
kadds4_correct       0.78      0.78    0.83     0.086 3.6    0.019 0.01
1 0.086
kadds5_correct       0.78      0.78    0.82     0.084 3.5    0.019 0.01
1 0.082
kadds6_correct       0.77      0.77    0.82     0.081 3.3    0.020 0.01
1 0.078
kadds8_correct       0.77      0.77    0.82     0.083 3.4    0.020 0.01
1 0.081
kadds9_correct       0.77      0.77    0.82     0.082 3.4    0.020 0.01
1 0.081
kadds10_correct      0.77      0.77    0.82     0.080 3.3    0.020 0.01
1 0.076
kadds13_correct      0.77      0.77    0.82     0.082 3.4    0.020 0.01
1 0.079
kadds15_correct      0.77      0.77    0.82     0.081 3.4    0.020 0.01
1 0.078
kadds16_correct      0.77      0.77    0.82     0.080 3.3    0.020 0.01
1 0.078
kadds17_correct      0.77      0.77    0.82     0.082 3.4    0.020 0.01
1 0.079
kadds20_correct      0.78      0.78    0.83     0.084 3.5    0.019 0.01
1 0.085
kadds21_correct      0.77      0.77    0.82     0.080 3.3    0.020 0.01
1 0.078
kadds25_correct      0.77      0.77    0.82     0.082 3.4    0.020 0.01
1 0.078
kadds26_correct      0.77      0.77    0.82     0.081 3.4    0.020 0.01
```

```
1 0.079
kadds31_correct      0.78      0.78    0.82     0.084 3.5    0.019 0.01
1 0.080
kadds32_correct      0.77      0.77    0.82     0.082 3.4    0.020 0.01
1 0.078
kadds33_correct      0.78      0.78    0.82     0.083 3.5    0.019 0.01
1 0.082

 Item statistics
                   n raw.r std.r r.cor r.drop mean   sd
kadds1_correct   266 0.225 0.238 0.195  0.171 0.11 0.31
kadds2_correct   266 0.485 0.494 0.497  0.428 0.82 0.39
kadds7_correct   265 0.404 0.394 0.375  0.329 0.68 0.47
kadds11_correct 266 0.433 0.412 0.390  0.355 0.47 0.50
kadds12_correct 266 0.439 0.425 0.407  0.364 0.63 0.48
kadds14_correct 266 0.391 0.378 0.358  0.311 0.54 0.50
kadds18_correct 266 0.453 0.431 0.413  0.378 0.41 0.49
kadds19_correct 265 0.358 0.342 0.314  0.272 0.52 0.50
kadds22_correct 265 0.420 0.423 0.411  0.348 0.68 0.47
kadds23_correct 266 0.356 0.343 0.313  0.280 0.32 0.47
kadds24_correct 266 0.377 0.361 0.335  0.299 0.39 0.49
kadds27_correct 266 0.141 0.134 0.085  0.075 0.16 0.37
kadds28_correct 265 0.400 0.395 0.375  0.321 0.52 0.50
kadds29_correct 266 0.365 0.354 0.324  0.284 0.47 0.50
kadds30_correct 266 0.298 0.286 0.249  0.226 0.23 0.42
kadds34_correct 266 0.240 0.228 0.183  0.164 0.24 0.43
kadds35_correct 265 0.417 0.404 0.382  0.339 0.55 0.50
kadds36_correct 265 0.421 0.424 0.414  0.353 0.75 0.43
kadds37_correct 265 0.289 0.279 0.246  0.217 0.24 0.43
kadds38_correct 266 0.244 0.222 0.178  0.158 0.39 0.49
kadds39_correct 265 0.372 0.367 0.344  0.302 0.26 0.44
kadds3_correct   265 0.285 0.320 0.288  0.240 0.92 0.26
kadds4_correct   266 0.078 0.087 0.025  0.016 0.15 0.35
kadds5_correct   266 0.196 0.203 0.160  0.126 0.21 0.41
kadds6_correct   265 0.378 0.365 0.341  0.293 0.45 0.50
kadds8_correct   266 0.270 0.271 0.239  0.192 0.33 0.47
kadds9_correct   266 0.242 0.281 0.248  0.187 0.88 0.33
kadds10_correct 265 0.383 0.394 0.368  0.313 0.79 0.41
kadds13_correct 265 0.277 0.315 0.284  0.229 0.92 0.28
kadds15_correct 263 0.335 0.358 0.332  0.272 0.84 0.37
kadds16_correct 266 0.370 0.399 0.383  0.311 0.83 0.37
kadds17_correct 265 0.293 0.294 0.259  0.213 0.65 0.48
kadds20_correct 266 0.185 0.178 0.126  0.097 0.55 0.50
kadds21_correct 266 0.393 0.402 0.382  0.318 0.64 0.48
kadds25_correct 266 0.324 0.333 0.303  0.250 0.70 0.46
kadds26_correct 266 0.317 0.348 0.325  0.262 0.89 0.32
kadds31_correct 266 0.216 0.219 0.172  0.131 0.57 0.50
kadds32_correct 265 0.320 0.322 0.289  0.244 0.69 0.46
kadds33_correct 266 0.235 0.230 0.184  0.151 0.41 0.49
```

```
Non missing response frequency for each item
                    0    1 miss
kadds1_correct  0.89 0.11 0.00
kadds2_correct  0.18 0.82 0.00
kadds7_correct  0.32 0.68 0.00
kadds11_correct 0.53 0.47 0.00
kadds12_correct 0.37 0.63 0.00
kadds14_correct 0.46 0.54 0.00
kadds18_correct 0.59 0.41 0.00
kadds19_correct 0.48 0.52 0.00
kadds22_correct 0.32 0.68 0.00
kadds23_correct 0.68 0.32 0.00
kadds24_correct 0.61 0.39 0.00
kadds27_correct 0.84 0.16 0.00
kadds28_correct 0.48 0.52 0.00
kadds29_correct 0.53 0.47 0.00
kadds30_correct 0.77 0.23 0.00
kadds34_correct 0.76 0.24 0.00
kadds35_correct 0.45 0.55 0.00
kadds36_correct 0.25 0.75 0.00
kadds37_correct 0.76 0.24 0.00
kadds38_correct 0.61 0.39 0.00
kadds39_correct 0.74 0.26 0.00
kadds3_correct  0.08 0.92 0.00
kadds4_correct  0.85 0.15 0.00
kadds5_correct  0.79 0.21 0.00
kadds6_correct  0.55 0.45 0.00
kadds8_correct  0.67 0.33 0.00
kadds9_correct  0.12 0.88 0.00
kadds10_correct 0.21 0.79 0.00
kadds13_correct 0.08 0.92 0.00
kadds15_correct 0.16 0.84 0.01
kadds16_correct 0.17 0.83 0.00
kadds17_correct 0.35 0.65 0.00
kadds20_correct 0.45 0.55 0.00
kadds21_correct 0.36 0.64 0.00
kadds25_correct 0.30 0.70 0.00
kadds26_correct 0.11 0.89 0.00
kadds31_correct 0.43 0.57 0.00
kadds32_correct 0.31 0.69 0.00
kadds33_correct 0.59 0.41 0.00
```

ASQ

```
df_inc %>%
  dplyr::select(starts_with("asq")) %>%
  dplyr::mutate_all(as.numeric) %>%
  psych::alpha()


Reliability analysis
```

```
Call: psych::alpha(x = .)

  raw_alpha std.alpha G6(smc) average_r S/N    ase mean  sd median_r
      0.95      0.95       1      0.43  21 0.0043  2.6 0.5     0.43

    95% confidence boundaries
         lower alpha upper
Feldt     0.94  0.95  0.96
Duhachek  0.94  0.95  0.96

 Reliability if an item is dropped:
       raw_alpha std.alpha G6(smc) average_r S/N alpha se  var.r med.r
asq_avg      0.95      0.95    0.96      0.41  18   0.0046 0.0064  0.42
asq1         0.95      0.95    0.98      0.43  20   0.0044 0.0107  0.43
asq2         0.95      0.95    0.98      0.43  20   0.0044 0.0104  0.43
asq3         0.95      0.95    0.98      0.43  20   0.0045 0.0103  0.42
asq4         0.95      0.95    0.98      0.44  20   0.0043 0.0099  0.43
asq5         0.95      0.95    0.98      0.44  20   0.0044 0.0104  0.43
asq6         0.95      0.95    0.98      0.43  20   0.0044 0.0105  0.43
asq7         0.95      0.95    0.98      0.43  20   0.0044 0.0107  0.43
asq8         0.95      0.95    0.98      0.43  20   0.0044 0.0105  0.43
asq9         0.95      0.95    0.98      0.43  20   0.0044 0.0106  0.43
asq10        0.95      0.95    0.98      0.43  20   0.0044 0.0104  0.43
asq11        0.95      0.95    0.98      0.43  20   0.0044 0.0106  0.43
asq12        0.95      0.95    0.98      0.43  20   0.0045 0.0101  0.43
asq13        0.95      0.95    0.98      0.43  20   0.0044 0.0105  0.43
asq14        0.95      0.95    0.98      0.43  20   0.0045 0.0105  0.42
asq15        0.95      0.95    0.98      0.43  20   0.0044 0.0105  0.43
asq16        0.95      0.95    0.98      0.44  20   0.0044 0.0100  0.43
asq17        0.95      0.95    0.98      0.43  20   0.0044 0.0102  0.43
asq18        0.95      0.95    0.98      0.43  20   0.0044 0.0107  0.43
asq19        0.95      0.95    0.98      0.43  20   0.0044 0.0107  0.43
asq20        0.95      0.95    0.98      0.43  20   0.0044 0.0102  0.43
asq21        0.95      0.95    0.98      0.44  20   0.0043 0.0103  0.43
asq22        0.95      0.95    0.98      0.43  20   0.0044 0.0107  0.43
asq23        0.95      0.95    0.98      0.43  20   0.0044 0.0106  0.43
asq24        0.95      0.95    0.98      0.44  20   0.0043 0.0099  0.43
asq25        0.95      0.95    0.98      0.43  20   0.0044 0.0101  0.43
asq26        0.95      0.95    0.98      0.43  20   0.0045 0.0106  0.43

 Item statistics
          n raw.r std.r r.cor r.drop mean   sd
asq_avg 266  1.00  1.00  1.00   1.00  2.6 0.50
asq1    265  0.64  0.65  0.65   0.61  2.7 0.69
asq2    266  0.64  0.65  0.65   0.61  2.9 0.72
asq3    266  0.74  0.74  0.74   0.71  2.7 0.72
asq4    265  0.56  0.56  0.56   0.52  2.0 0.76
asq5    265  0.61  0.61  0.61   0.57  2.5 0.70
asq6    266  0.67  0.67  0.67   0.63  2.8 0.78
asq7    266  0.70  0.70  0.70   0.67  2.4 0.73
```

```
asq8    266  0.70  0.70  0.70   0.67  2.8 0.72
asq9    266  0.67  0.68  0.68   0.64  2.8 0.67
asq10   266  0.70  0.70  0.70   0.67  2.4 0.80
asq11   265  0.68  0.68  0.68   0.64  2.6 0.80
asq12   266  0.71  0.71  0.71   0.68  2.2 0.75
asq13   266  0.65  0.65  0.65   0.61  2.7 0.76
asq14   266  0.75  0.75  0.75   0.72  2.4 0.73
asq15   266  0.66  0.66  0.66   0.63  2.8 0.73
asq16   266  0.63  0.62  0.62   0.59  2.2 0.81
asq17   266  0.65  0.66  0.66   0.62  2.9 0.72
asq18   266  0.66  0.66  0.66   0.62  2.7 0.75
asq19   265  0.69  0.69  0.69   0.66  2.4 0.77
asq20   266  0.69  0.69  0.69   0.66  2.2 0.82
asq21   266  0.57  0.57  0.57   0.53  2.8 0.81
asq22   266  0.66  0.66  0.66   0.63  2.3 0.79
asq23   265  0.65  0.65  0.65   0.61  2.5 0.73
asq24   265  0.54  0.54  0.54   0.49  2.9 0.80
asq25   266  0.66  0.66  0.66   0.63  2.1 0.79
asq26   266  0.71  0.70  0.70   0.68  2.7 0.76
```

Favorability Ratings

```
df_inc %>%
  dplyr::select(starts_with("fav_")) %>%
  dplyr::mutate_all(as.numeric) %>%
  psych::alpha()


Reliability analysis
Call: psych::alpha(x = .)

  raw_alpha std.alpha G6(smc) average_r S/N    ase mean sd median_r
      0.95      0.96    0.99      0.52  21 0.0046   67 18     0.52

    95% confidence boundaries
         lower alpha upper
Feldt     0.94  0.95  0.96
Duhachek  0.94  0.95  0.96

 Reliability if an item is dropped:
                  raw_alpha std.alpha G6(smc) average_r S/N alpha se va
r.r
fav_overall_avg        0.95      0.95    0.98      0.51  20   0.0050 0.
047
fav_pharm_avg          0.95      0.96    0.99      0.53  21   0.0046 0.
043
fav_psy_avg            0.95      0.95    0.99      0.51  20   0.0050 0.
047
fav_pmt_avg            0.95      0.95    0.98      0.51  20   0.0049 0.
047
fav_ed_avg             0.95      0.95    0.98      0.51  20   0.0050 0.
```

```
047
fav_child_overall      0.95      0.95    0.99      0.51  20   0.0049 0.
048
fav_pers_overall       0.95      0.95    0.99      0.51  20   0.0049 0.
047
fav_int_overall        0.95      0.95    0.99      0.51  20   0.0049 0.
047
fav_child_pharm        0.95      0.96    0.99      0.53  21   0.0046 0.
044
fav_pers_pharm         0.95      0.96    0.99      0.53  21   0.0045 0.
043
fav_rec_pharm          0.95      0.96    0.99      0.53  21   0.0046 0.
043
fav_child_psy          0.95      0.95    0.99      0.52  20   0.0049 0.
048
fav_pers_psy           0.95      0.95    0.99      0.51  20   0.0049 0.
047
fav_rec_psy            0.95      0.95    0.99      0.51  20   0.0050 0.
047
fav_child_pmt          0.95      0.95    0.99      0.52  20   0.0049 0.
047
fav_pers_pmt           0.95      0.95    0.99      0.51  20   0.0049 0.
048
fav_rec_pmt            0.95      0.95    0.99      0.52  20   0.0049 0.
048
fav_child_ed           0.95      0.95    0.99      0.52  20   0.0049 0.
048
fav_pers_ed            0.95      0.95    0.99      0.51  20   0.0050 0.
048
fav_rec_ed             0.95      0.95    0.99      0.51  20   0.0050 0.
048
                  med.r
fav_overall_avg    0.52
fav_pharm_avg      0.52
fav_psy_avg        0.51
fav_pmt_avg        0.51
fav_ed_avg         0.51
fav_child_overall  0.51
fav_pers_overall   0.52
fav_int_overall    0.52
fav_child_pharm    0.52
fav_pers_pharm     0.52
fav_rec_pharm      0.52
fav_child_psy      0.52
fav_pers_psy       0.51
fav_rec_psy        0.51
fav_child_pmt      0.52
fav_pers_pmt       0.52
fav_rec_pmt        0.52
fav_child_ed       0.52
```

```
fav_pers_ed        0.51
fav_rec_ed         0.51

 Item statistics
                    n raw.r std.r r.cor r.drop mean sd
fav_overall_avg   264  0.79  0.80  0.81   0.76   68 23
fav_pharm_avg     266  0.63  0.59  0.52   0.58   54 29
fav_psy_avg       266  0.79  0.80  0.74   0.76   73 22
fav_pmt_avg       264  0.75  0.78  0.78   0.73   72 21
fav_ed_avg        265  0.81  0.81  0.81   0.78   69 25
fav_child_overall 265  0.77  0.78  0.79   0.74   67 23
fav_pers_overall  266  0.76  0.77  0.77   0.73   67 24
fav_int_overall   265  0.76  0.77  0.78   0.73   69 24
fav_child_pharm   266  0.62  0.58  0.57   0.57   55 29
fav_pers_pharm    266  0.61  0.57  0.57   0.56   52 30
fav_rec_pharm     266  0.62  0.57  0.57   0.56   55 30
fav_child_psy     266  0.72  0.74  0.73   0.69   73 22
fav_pers_psy      266  0.76  0.78  0.78   0.74   72 23
fav_rec_psy       266  0.78  0.80  0.79   0.75   74 23
fav_child_pmt     265  0.71  0.74  0.74   0.68   71 21
fav_pers_pmt      266  0.74  0.76  0.77   0.71   71 22
fav_rec_pmt       265  0.72  0.74  0.75   0.69   73 22
fav_child_ed      266  0.75  0.75  0.75   0.71   69 25
fav_pers_ed       265  0.77  0.77  0.78   0.74   68 27
fav_rec_ed        266  0.80  0.81  0.81   0.77   69 26
```

Correlations Between Variables

Correlations between KADDS total scores, ASQ scores, and overall favorability average were computed. Additionally, correlations between intervention-specific favorability ratings are also included. Scatterplots were generated to evaluate linearity of relationships.

```
df_inc %>%
  cor.test(~ kadds_tot + asq_avg,
           data = .)


    Pearson's product-moment correlation

data:  kadds_tot and asq_avg
t = 0.76857, df = 263, p-value = 0.4428
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 -0.07357962  0.16688541
sample estimates:
       cor
0.04733873
```

```
df_inc %>%
  furniture::tableC(kadds_tot, asq_avg, fav_overall_avg,
                    na.rm = TRUE,
                    output = "markdown")
```

	[1]	[2]	[3]
[1]kadds_tot	1.00		
[2]asq_avg	0.047 (0.447)	1.00	
[3]fav_overall_avg	0.119 (0.055)	0.079 (0.201)	1.00

```
df_inc %>%
  furniture::tableC(kadds_tot, asq_avg, fav_overall_avg, fav_pharm_avg,
fav_psy_avg,
                    fav_pmt_avg, fav_ed_avg,fav_child_overall, fav_pers
_overall,
                    fav_int_overall,
                    na.rm = TRUE,
                    output = "markdown")
```

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
[1]kadds_tot	1.00									
[2]asq_avg	0.052 (0.405)	1.00								
[3]fav_overall_avg	0.113 (0.069)	0.081 (0.201)	1.00							
[4]fav_pharm_avg	0.165 (0.008)	0.171 (0.006)	0.298 (<.001)	1.00						
[5]fav_psy_avg	0.1 (0.107)	0.083 (0.18)	0.611 (<.001)	0.293 (<.001)	1.00					
[6]fav_pmt_avg	0.05 (0.418)	0.073 (0.242)	0.499 (<.001)	0.308 (<.001)	0.557 (<.001)	1.00				

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
[7]fav_ed_avg	0.033 (0.595)	0.008 (0.9)	0.603 (<.001)	0.313 (<.001)	0.572 (<.001)	0.57 (<.001)	1.00			
[8]fav_child_overall	0.128 (0.039)	0.081 (0.192)	0.96 (<.001)	0.303 (<.001)	0.599 (<.001)	0.52 (<.001)	0.567 (<.001)	1.00		
[9]fav_pers_overall	0.096 (0.123)	0.079 (0.204)	0.974 (<.001)	0.275 (<.001)	0.572 (<.001)	0.468 (<.001)	0.599 (<.001)	0.9 (<.001)	1.00	
[10]fav_int_overall	0.105 (0.09)	0.071 (0.254)	0.97 (<.001)	0.288 (<.001)	0.603 (<.001)	0.464 (<.001)	0.585 (<.001)	0.89 (<.001)	0.927 (<.001)	1.00

```
df_inc %>%
  cor.test(~ kadds_tot + fav_overall_avg,
           data = .)


    Pearson's product-moment correlation

data:  kadds_tot and fav_overall_avg
t = 1.9284, df = 261, p-value = 0.05489
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 -0.002468399  0.236095641
sample estimates:
      cor
0.1185237
```

```
df_inc %>%
  cor.test(~ kadds_tot + fav_pharm_avg,
           data = .)


    Pearson's product-moment correlation

data:  kadds_tot and fav_pharm_avg
t = 2.8852, df = 263, p-value = 0.004236
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 0.05583581 0.28954349
sample estimates:
```

```
     cor
0.175156

df_inc %>%
  cor.test(~ kadds_tot + fav_psy_avg,
           data = .)


    Pearson's product-moment correlation

data:  kadds_tot and fav_psy_avg
t = 1.7096, df = 263, p-value = 0.08852
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 -0.01586253  0.22252406
sample estimates:
      cor
0.1048365

df_inc %>%
  cor.test(~ kadds_tot + fav_pmt_avg,
           data = .)


    Pearson's product-moment correlation

data:  kadds_tot and fav_pmt_avg
t = 0.82688, df = 261, p-value = 0.4091
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 -0.07027536  0.17101516
sample estimates:
       cor
0.05111583

df_inc %>%
  cor.test(~ kadds_tot + fav_ed_avg,
           data = .)


    Pearson's product-moment correlation

data:  kadds_tot and fav_ed_avg
t = 0.62309, df = 262, p-value = 0.5338
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 -0.08264473  0.15845722
sample estimates:
       cor
0.03846607
```

```
df_inc %>%
  cor.test(~ kadds_tot + fav_child_overall,
           data = .)


    Pearson's product-moment correlation

data:  kadds_tot and fav_child_overall
t = 2.1784, df = 262, p-value = 0.03027
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 0.01285891 0.25007899
sample estimates:
      cor
0.1333789

df_inc %>%
  cor.test(~ kadds_tot + fav_pers_overall,
           data = .)


    Pearson's product-moment correlation

data:  kadds_tot and fav_pers_overall
t = 1.7644, df = 263, p-value = 0.07883
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 -0.0125041  0.2257144
sample estimates:
      cor
0.1081575

df_inc %>%
  cor.test(~ kadds_tot + fav_int_overall,
           data = .)


    Pearson's product-moment correlation

data:  kadds_tot and fav_int_overall
t = 1.8267, df = 262, p-value = 0.06888
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 -0.008703024  0.229758229
sample estimates:
      cor
0.1121418

df_inc %>%
  cor.test(~ asq_avg + fav_overall_avg,
           data = .)
```

```
    Pearson's product-moment correlation

data:  asq_avg and fav_overall_avg
t = 1.2724, df = 262, p-value = 0.2044
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 -0.0427673  0.1972254
sample estimates:
       cor
0.07836432
```

```
df_inc %>%
  cor.test(~ asq_avg + fav_pharm_avg,
           data = .)
```

```
    Pearson's product-moment correlation

data:  asq_avg and fav_pharm_avg
t = 2.818, df = 264, p-value = 0.005198
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 0.05167662 0.28529405
sample estimates:
      cor
0.1708861
```

```
df_inc %>%
  cor.test(~ asq_avg + fav_psy_avg,
           data = .)
```

```
    Pearson's product-moment correlation

data:  asq_avg and fav_psy_avg
t = 1.3546, df = 264, p-value = 0.1767
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 -0.03756392  0.20134262
sample estimates:
       cor
0.08308299
```

```
df_inc %>%
  cor.test(~ asq_avg + fav_pmt_avg,
           data = .)
```

```
    Pearson's product-moment correlation
```

```
data:  asq_avg and fav_pmt_avg
t = 1.1367, df = 262, p-value = 0.2567
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 -0.05110409  0.18918213
sample estimates:
       cor
0.07005514
```

```
df_inc %>%
  cor.test(~ asq_avg + fav_ed_avg,
           data = .)
```

```

    Pearson's product-moment correlation

data:  asq_avg and fav_ed_avg
t = 0.15232, df = 263, p-value = 0.8791
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 -0.1112324  0.1297439
sample estimates:
        cor
0.009392112
```

```
df_inc %>%
  cor.test(~ asq_avg + fav_child_overall,
           data = .)
```

```

    Pearson's product-moment correlation

data:  asq_avg and fav_child_overall
t = 1.3064, df = 263, p-value = 0.1926
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 -0.0405975  0.1988685
sample estimates:
       cor
0.08029393
```

```
df_inc %>%
  cor.test(~ asq_avg + fav_pers_overall,
           data = .)
```

```

    Pearson's product-moment correlation

data:  asq_avg and fav_pers_overall
t = 1.258, df = 264, p-value = 0.2095
alternative hypothesis: true correlation is not equal to 0
```

```
95 percent confidence interval:
 -0.0434796  0.1956507
sample estimates:
       cor
0.07719564

df_inc %>%
  cor.test(~ asq_avg + fav_int_overall,
           data = .)


    Pearson's product-moment correlation

data:  asq_avg and fav_int_overall
t = 1.1413, df = 263, p-value = 0.2548
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 -0.05072432  0.18910236
sample estimates:
       cor
0.07020342

df_inc %>%
  cor.test(~ fav_overall_avg + fav_pharm_avg,
           data = .)


    Pearson's product-moment correlation

data:  fav_overall_avg and fav_pharm_avg
t = 5.0775, df = 262, p-value = 7.266e-07
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 0.1852747 0.4053855
sample estimates:
      cor
0.2993069

df_inc %>%
  cor.test(~ fav_overall_avg + fav_psy_avg,
           data = .)


    Pearson's product-moment correlation

data:  fav_overall_avg and fav_psy_avg
t = 12.524, df = 262, p-value < 2.2e-16
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 0.5303978 0.6822632
sample estimates:
```

```
      cor
0.6119402

df_inc %>%
  cor.test(~ fav_overall_avg + fav_pmt_avg,
           data = .)


    Pearson's product-moment correlation

data:  fav_overall_avg and fav_pmt_avg
t = 9.3062, df = 260, p-value < 2.2e-16
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 0.4030985 0.5855818
sample estimates:
      cor
0.4998674

df_inc %>%
  cor.test(~ fav_overall_avg + fav_ed_avg,
           data = .)


    Pearson's product-moment correlation

data:  fav_overall_avg and fav_ed_avg
t = 12.231, df = 261, p-value < 2.2e-16
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 0.5206792 0.6752738
sample estimates:
      cor
0.6036201

df_inc %>%
  cor.test(~ fav_overall_avg + fav_child_overall,
           data = .)


    Pearson's product-moment correlation

data:  fav_overall_avg and fav_child_overall
t = 55.265, df = 262, p-value < 2.2e-16
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 0.9488959 0.9682319
sample estimates:
      cor
0.9596841
```

```
df_inc %>%
  cor.test(~ fav_overall_avg + fav_pers_overall,
           data = .)


    Pearson's product-moment correlation

data:  fav_overall_avg and fav_pers_overall
t = 68.603, df = 262, p-value < 2.2e-16
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 0.9660620 0.9789731
sample estimates:
      cor
0.9732761

df_inc %>%
  cor.test(~ fav_overall_avg + fav_int_overall,
           data = .)


    Pearson's product-moment correlation

data:  fav_overall_avg and fav_int_overall
t = 64.891, df = 262, p-value < 2.2e-16
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 0.9622603 0.9766004
sample estimates:
      cor
0.9702702

df_inc %>%
  cor.test(~ fav_pharm_avg + fav_psy_avg,
           data = .)


    Pearson's product-moment correlation

data:  fav_pharm_avg and fav_psy_avg
t = 5.0019, df = 264, p-value = 1.037e-06
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 0.1803309 0.4003266
sample estimates:
      cor
0.2942212

df_inc %>%
  cor.test(~ fav_pharm_avg + fav_pmt_avg,
           data = .)
```

```
    Pearson's product-moment correlation

data:  fav_pharm_avg and fav_pmt_avg
t = 5.1605, df = 262, p-value = 4.869e-07
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 0.189995 0.409466
sample estimates:
      cor
0.3037546
```

```
df_inc %>%
  cor.test(~ fav_pharm_avg + fav_ed_avg,
           data = .)
```

```
    Pearson's product-moment correlation

data:  fav_pharm_avg and fav_ed_avg
t = 5.3587, df = 263, p-value = 1.833e-07
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 0.2008387 0.4184243
sample estimates:
      cor
0.3137445
```

```
df_inc %>%
  cor.test(~ fav_pharm_avg + fav_child_overall,
           data = .)
```

```
    Pearson's product-moment correlation

data:  fav_pharm_avg and fav_child_overall
t = 5.1701, df = 263, p-value = 4.636e-07
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 0.1902054 0.4092619
sample estimates:
      cor
0.3037425
```

```
df_inc %>%
  cor.test(~ fav_pharm_avg + fav_pers_overall,
           data = .)
```

```
    Pearson's product-moment correlation
```

```
data:  fav_pharm_avg and fav_pers_overall
t = 4.6963, df = 264, p-value = 4.264e-06
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 0.1628379 0.3850827
sample estimates:
      cor
0.2776713
```

```
df_inc %>%
  cor.test(~ fav_pharm_avg + fav_int_overall,
           data = .)
```

```

    Pearson's product-moment correlation

data:  fav_pharm_avg and fav_int_overall
t = 4.9132, df = 263, p-value = 1.577e-06
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 0.1755847 0.3965910
sample estimates:
      cor
0.2899486
```

```
df_inc %>%
  cor.test(~ fav_psy_avg + fav_pmt_avg,
           data = .)
```

```

    Pearson's product-moment correlation

data:  fav_psy_avg and fav_pmt_avg
t = 10.793, df = 262, p-value < 2.2e-16
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 0.4652149 0.6331063
sample estimates:
     cor
0.554783
```

```
df_inc %>%
  cor.test(~ fav_psy_avg + fav_ed_avg,
           data = .)
```

```

    Pearson's product-moment correlation

data:  fav_psy_avg and fav_ed_avg
t = 11.317, df = 263, p-value < 2.2e-16
alternative hypothesis: true correlation is not equal to 0
```

```
95 percent confidence interval:
 0.4852146 0.6480655
sample estimates:
      cor
0.5722548

df_inc %>%
  cor.test(~ fav_psy_avg + fav_child_overall,
           data = .)


    Pearson's product-moment correlation

data:  fav_psy_avg and fav_child_overall
t = 12.097, df = 263, p-value < 2.2e-16
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 0.5144968 0.6701417
sample estimates:
      cor
0.5979263

df_inc %>%
  cor.test(~ fav_psy_avg + fav_pers_overall,
           data = .)


    Pearson's product-moment correlation

data:  fav_psy_avg and fav_pers_overall
t = 11.349, df = 264, p-value < 2.2e-16
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 0.4858309 0.6482658
sample estimates:
     cor
0.572642

df_inc %>%
  cor.test(~ fav_psy_avg + fav_int_overall,
           data = .)


    Pearson's product-moment correlation

data:  fav_psy_avg and fav_int_overall
t = 12.269, df = 263, p-value < 2.2e-16
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 0.5206941 0.6747788
sample estimates:
```

```
      cor
0.6033375

df_inc %>%
  cor.test(~ fav_pmt_avg + fav_ed_avg,
           data = .)


    Pearson's product-moment correlation

data:  fav_pmt_avg and fav_ed_avg
t = 11.063, df = 261, p-value < 2.2e-16
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 0.4766178 0.6420786
sample estimates:
     cor
0.565002

df_inc %>%
  cor.test(~ fav_pmt_avg + fav_child_overall,
           data = .)


    Pearson's product-moment correlation

data:  fav_pmt_avg and fav_child_overall
t = 9.8719, df = 261, p-value < 2.2e-16
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 0.4274150 0.6042619
sample estimates:
      cor
0.5214152

df_inc %>%
  cor.test(~ fav_pmt_avg + fav_pers_overall,
           data = .)


    Pearson's product-moment correlation

data:  fav_pmt_avg and fav_pers_overall
t = 8.5639, df = 262, p-value = 9.456e-16
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 0.3676886 0.5569393
sample estimates:
      cor
0.4676564
```

```
df_inc %>%
  cor.test(~ fav_pmt_avg + fav_int_overall,
           data = .)


    Pearson's product-moment correlation

data:  fav_pmt_avg and fav_int_overall
t = 8.4489, df = 261, p-value = 2.085e-15
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 0.3628041 0.5533625
sample estimates:
      cor
0.4634241

df_inc %>%
  cor.test(~ fav_ed_avg + fav_child_overall,
           data = .)


    Pearson's product-moment correlation

data:  fav_ed_avg and fav_child_overall
t = 11.095, df = 262, p-value < 2.2e-16
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 0.4772132 0.6422575
sample estimates:
      cor
0.5653679

df_inc %>%
  cor.test(~ fav_ed_avg + fav_pers_overall,
           data = .)


    Pearson's product-moment correlation

data:  fav_ed_avg and fav_pers_overall
t = 12.128, df = 263, p-value < 2.2e-16
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 0.5156042 0.6709712
sample estimates:
      cor
0.5988938

df_inc %>%
  cor.test(~ fav_ed_avg + fav_int_overall,
           data = .)
```

```
    Pearson's product-moment correlation

data:  fav_ed_avg and fav_int_overall
t = 11.699, df = 262, p-value < 2.2e-16
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 0.5004442 0.6598433
sample estimates:
      cor
0.5857801
```

```
df_inc %>%
  cor.test(~ fav_child_overall + fav_pers_overall,
           data = .)
```

```
    Pearson's product-moment correlation

data:  fav_child_overall and fav_pers_overall
t = 33.311, df = 263, p-value < 2.2e-16
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 0.8732155 0.9199399
sample estimates:
      cor
0.8991088
```

```
df_inc %>%
  cor.test(~ fav_child_overall + fav_int_overall,
           data = .)
```

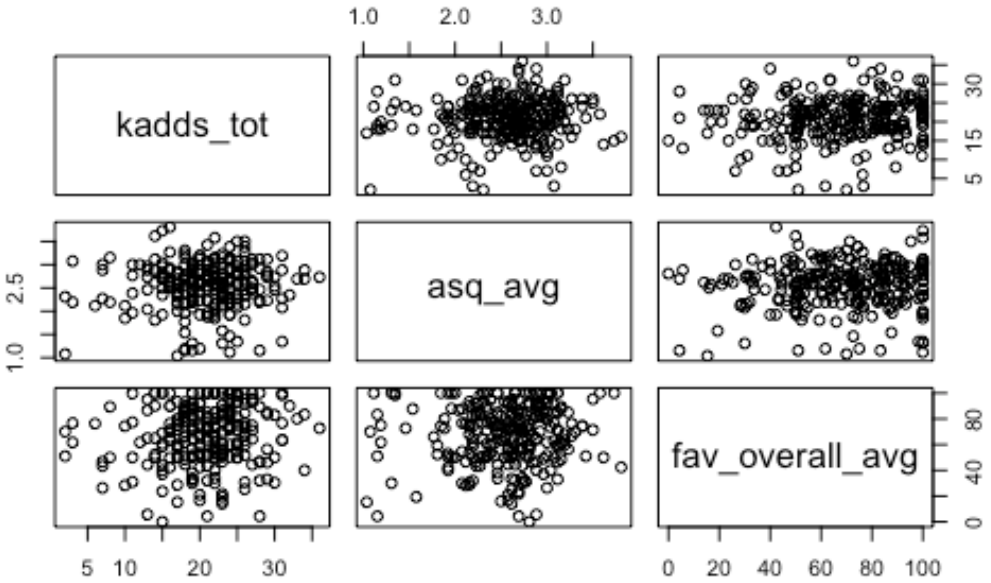
```
    Pearson's product-moment correlation

data:  fav_child_overall and fav_int_overall
t = 31.642, df = 262, p-value < 2.2e-16
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 0.8622184 0.9128842
sample estimates:
      cor
0.8902741
```

```
df_inc %>%
  cor.test(~ fav_pers_overall + fav_int_overall,
           data = .)
```

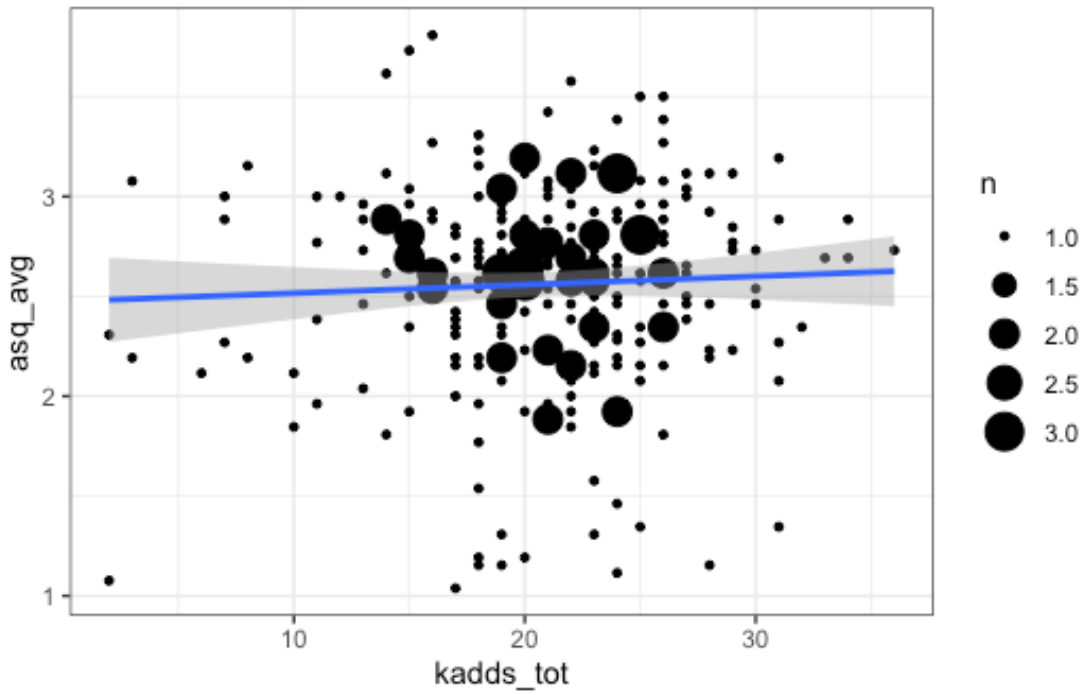
```
    Pearson's product-moment correlation
```

```
data:  fav_pers_overall and fav_int_overall
t = 39.513, df = 263, p-value < 2.2e-16
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 0.9055603 0.9407416
sample estimates:
      cor
0.9251119
```

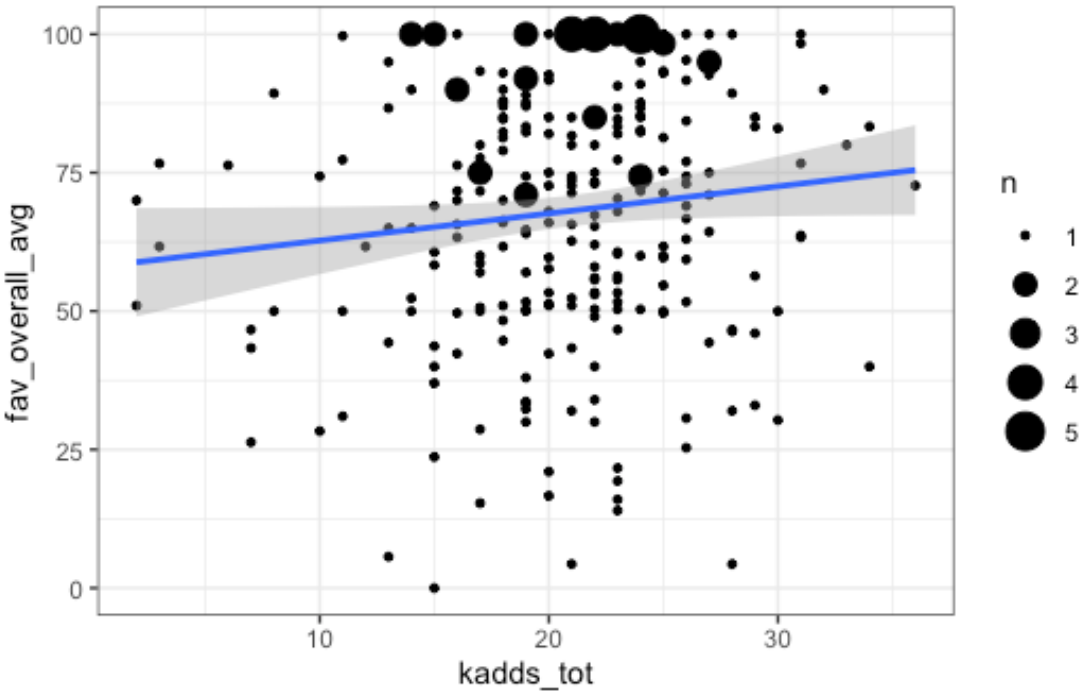
```
df_inc %>%
  dplyr::select(kadds_tot, asq_avg, fav_overall_avg) %>%
  pairs()
```



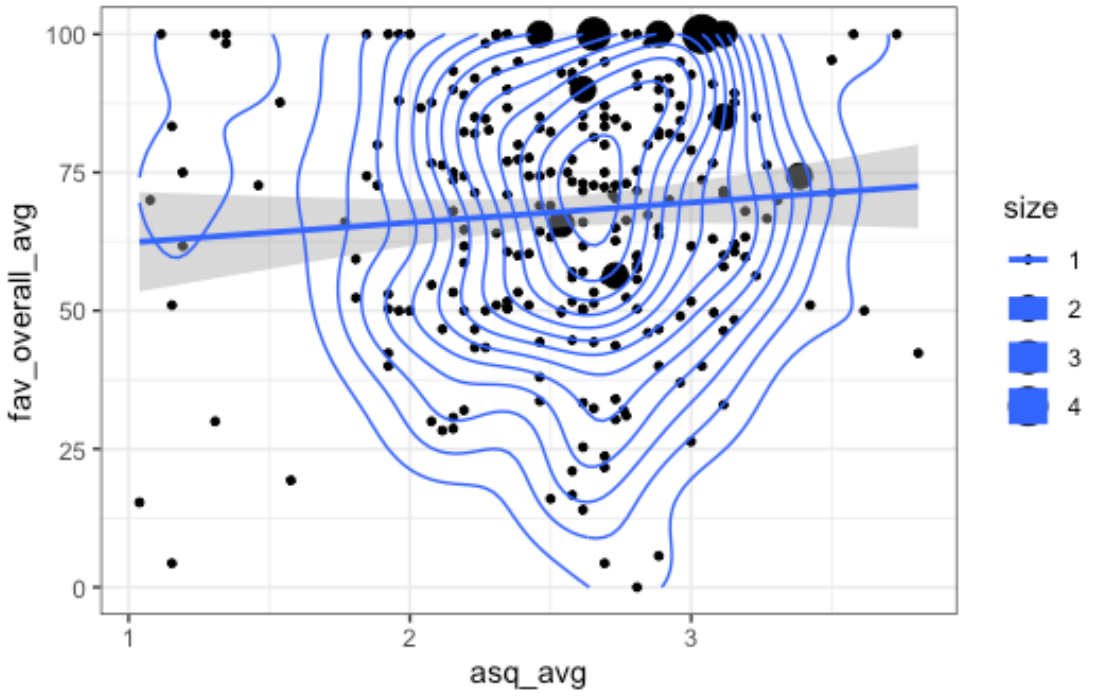

```
df_inc %>%
  ggplot(aes(x = kadds_tot,
             y = asq_avg)) +
  geom_count() +
  geom_smooth(method = "lm") +
  theme_bw()
```




```
df_inc %>%
  ggplot(aes(x = kadds_tot,
             y = fav_overall_avg)) +
  geom_count() +
  geom_smooth(method = "lm") +
  theme_bw()
```



```
df_inc %>%
  ggplot(aes(x = asq_avg,
             y = fav_overall_avg)) +
  geom_count() +
  geom_smooth(method = "lm") +
  geom_density2d(show.guide=FALSE) +
  theme_bw()
```



Modeling: Mediation

Define Models

Both an unmediated model proposing the direct effect and a mediation model were defined. The proposed direct effect describes increasing ADHD knowledge (as measured by the KADDS total score) leading to increased favorable views of intervention. The mediated model proposes that ADHD stigma (ASQ score) is the intervening or causal mechanism. Namely, as ADHD knowledge increases this decreases ADHD stigma, which in turn leads to increases in intervention favorability.

Two variations on the base model were also described based on the same theoretical foundation but accounting for potential differences in intervention type. The first variation (Med2) substitutes overall favorability with favorability toward interventions for their child specifically. The second variation (Med3) substitutes overall favorability with favorability for psychopharmacological intervention.

Mediation resources: https://davidakenny.net/cm/mediate.htm

```
mod_unmed_1 <- '
  # direct effect
```

```
    fav_overall_avg ~ c*kadds_tot
'

mod_med_1 <- '
  # direct effect
    fav_overall_avg ~ cp*kadds_tot
  # mediator
    asq_avg ~ a*kadds_tot
    fav_overall_avg ~ b*asq_avg
  # indirect effect (a * b)
    ab := a*b
  # total effect
    total := cp + (a*b)
'

mod_med_2 <- '
  # direct effect
    fav_child_overall ~ cp*kadds_tot
  # mediator
    asq_avg ~ a*kadds_tot
    fav_child_overall ~ b*asq_avg
  # indirect effect (a * b)
    ab := a*b
  # total effect
    total := cp + (a*b)
'

mod_unmed_2 <- '
  # direct effect
    fav_child_overall ~ c*kadds_tot
'

mod_med_3 <- '
  # direct effect
    fav_pharm_avg ~ cp*kadds_tot
  # mediator
    asq_avg ~ a*kadds_tot
    fav_pharm_avg ~ b*asq_avg
  # indirect effect (a * b)
    ab := a*b
  # total effect
    total := cp + (a*b)
'
```

Fit Models

Each of the specified models were fit using the lavaan package. Full information maximum likelihood (FIML) was used for the estimator due to the nonsystematic missingness present in the data. Using this method, means and variances for the relationships between the varaibles are estimated with each other rather than relying

on existing sample values. For more information regarding the use of FIML, please see: https://francish.net/post/accounting-for-missing-data/

Proposed

```
fit_unmed_1 <- lavaan::sem(model = mod_unmed_1,
                           data = df_inc,
                           missing = "fiml",
                           fixed.x = FALSE)

summary(fit_unmed_1)

lavaan 0.6.16 ended normally after 14 iterations

  Estimator                                         ML
  Optimization method                           NLMINB
  Number of model parameters                         5

  Number of observations                           266
  Number of missing patterns                         3

Model Test User Model:

  Test statistic                                 0.000
  Degrees of freedom                                 0

Parameter Estimates:

  Standard errors                             Standard
  Information                                 Observed
  Observed information based on                Hessian

Regressions:
                   Estimate  Std.Err  z-value  P(>|z|)
  fav_overall_avg ~
    kadds_tot  (c)     0.488    0.252    1.936    0.053

Intercepts:
                   Estimate  Std.Err  z-value  P(>|z|)
   .fav_overall_vg   57.836    5.420   10.671    0.000
    kadds_tot        20.765    0.345   60.274    0.000

Variances:
                   Estimate  Std.Err  z-value  P(>|z|)
   .fav_overall_vg  526.885   45.860   11.489    0.000
    kadds_tot        31.453    2.732   11.511    0.000

lavaan::parameterEstimates(fit_unmed_1)

              lhs op             rhs label     est     se      z pvalue
1 fav_overall_avg  ~       kadds_tot     c   0.488  0.252  1.936  0.053
2 fav_overall_avg ~~ fav_overall_avg       526.885 45.860 11.489  0.000
```

```
3       kadds_tot ~~       kadds_tot        31.453  2.732 11.511  0.000
4 fav_overall_avg ~1                        57.836  5.420 10.671  0.000
5       kadds_tot ~1                        20.765  0.345 60.274  0.000
  ci.lower ci.upper
1   -0.006    0.982
2  437.001  616.770
3   26.098   36.809
4   47.213   68.459
5   20.090   21.440

fit_med_1 <- lavaan::sem(model = mod_med_1,
                         data = df_inc,
                         missing = "fiml",
                         fixed.x = FALSE)

summary(fit_med_1)

lavaan 0.6.16 ended normally after 23 iterations

  Estimator                                         ML
  Optimization method                           NLMINB
  Number of model parameters                         9

  Number of observations                           266
  Number of missing patterns                         3

Model Test User Model:

  Test statistic                                 0.000
  Degrees of freedom                                 0

Parameter Estimates:

  Standard errors                             Standard
  Information                                 Observed
  Observed information based on                Hessian

Regressions:
                   Estimate  Std.Err  z-value  P(>|z|)
  fav_overall_avg ~
    kadds_tot (cp)     0.474    0.252    1.882    0.060
  asq_avg ~
    kadds_tot  (a)     0.004    0.005    0.770    0.441
  fav_overall_avg ~
    asq_avg    (b)     3.380    2.826    1.196    0.232

Intercepts:
                  Estimate  Std.Err  z-value  P(>|z|)
   .fav_overall_vg   49.476    8.838    5.598    0.000
   .asq_avg           2.475    0.117   21.178    0.000
```

```
    kadds_tot        20.765    0.345   60.275    0.000

Variances:
                   Estimate  Std.Err  z-value  P(>|z|)
   .fav_overall_vg  524.050   45.613   11.489    0.000
   .asq_avg           0.247    0.021   11.533    0.000
    kadds_tot        31.453    2.732   11.511    0.000

Defined Parameters:
                   Estimate  Std.Err  z-value  P(>|z|)
    ab                0.014    0.022    0.648    0.517
    total             0.488    0.252    1.935    0.053
```

```
lavaan::parameterEstimates(fit_med_1)
```

```
               lhs op             rhs label     est     se      z pvalu
e
1  fav_overall_avg  ~       kadds_tot    cp   0.474  0.252  1.882  0.06
0
2          asq_avg  ~       kadds_tot     a   0.004  0.005  0.770  0.44
1
3  fav_overall_avg  ~         asq_avg     b   3.380  2.826  1.196  0.23
2
4  fav_overall_avg ~~ fav_overall_avg       524.050 45.613 11.489  0.00
0
5          asq_avg ~~         asq_avg         0.247  0.021 11.533  0.00
0
6        kadds_tot ~~       kadds_tot        31.453  2.732 11.511  0.00
0
7  fav_overall_avg ~1                        49.476  8.838  5.598  0.00
0
8          asq_avg ~1                         2.475  0.117 21.178  0.00
0
9        kadds_tot ~1                        20.765  0.345 60.275  0.00
0
10              ab :=             a*b    ab   0.014  0.022  0.648  0.51
7
11           total :=        cp+(a*b) total   0.488  0.252  1.935  0.05
3
   ci.lower ci.upper
1    -0.020    0.967
2    -0.006    0.015
3    -2.159    8.919
4   434.649  613.450
5     0.205    0.289
6    26.098   36.808
7    32.154   66.798
8     2.246    2.704
9    20.090   21.440
```

```
10   -0.029    0.057
11   -0.006    0.982
```

Theoretical Variations

```
fit_med_2 <- lavaan::sem(model = mod_med_2,
                         data = df_inc,
                         missing = "fiml",
                         fixed.x = FALSE)

summary(fit_med_2)

lavaan 0.6.16 ended normally after 25 iterations

  Estimator                                         ML
  Optimization method                           NLMINB
  Number of model parameters                         9

  Number of observations                           266
  Number of missing patterns                         3

Model Test User Model:

  Test statistic                                 0.000
  Degrees of freedom                                 0

Parameter Estimates:

  Standard errors                             Standard
  Information                                 Observed
  Observed information based on                Hessian

Regressions:
                   Estimate  Std.Err  z-value  P(>|z|)
  fav_child_overall ~
    kadds_tot (cp)    0.538    0.252    2.134    0.033
  asq_avg ~
    kadds_tot  (a)    0.004    0.005    0.771    0.441
  fav_child_overall ~
    asq_avg    (b)    3.470    2.837    1.223    0.221

Intercepts:
                  Estimate  Std.Err  z-value  P(>|z|)
   .fav_child_vrll   47.351    8.868    5.340    0.000
   .asq_avg           2.475    0.117   21.177    0.000
    kadds_tot        20.765    0.345   60.277    0.000

Variances:
                  Estimate  Std.Err  z-value  P(>|z|)
   .fav_child_vrll  528.229   45.890   11.511    0.000
   .asq_avg           0.247    0.021   11.533    0.000
```

```
    kadds_tot        31.453    2.732   11.512    0.000

Defined Parameters:
                  Estimate  Std.Err  z-value  P(>|z|)
    ab               0.015    0.022    0.652    0.514
    total            0.552    0.252    2.188    0.029
```

```
fit_unmed_2 <- lavaan::sem(model = mod_unmed_2,
                           data = df_inc,
                           missing = "fiml",
                           fixed.x = FALSE)
```

```
summary(fit_unmed_2)
```

```
lavaan 0.6.16 ended normally after 12 iterations

  Estimator                                         ML
  Optimization method                           NLMINB
  Number of model parameters                         5

  Number of observations                           266
  Number of missing patterns                         3

Model Test User Model:

  Test statistic                                 0.000
  Degrees of freedom                                 0

Parameter Estimates:

  Standard errors                             Standard
  Information                                 Observed
  Observed information based on                Hessian

Regressions:
                   Estimate  Std.Err  z-value  P(>|z|)
  fav_child_overall ~
    kadds_tot  (c)    0.552    0.252    2.187    0.029

Intercepts:
                  Estimate  Std.Err  z-value  P(>|z|)
   .fav_child_vrll   55.945    5.425   10.312    0.000
    kadds_tot        20.765    0.345   60.276    0.000

Variances:
                  Estimate  Std.Err  z-value  P(>|z|)
   .fav_child_vrll  531.210   46.149   11.511    0.000
    kadds_tot        31.453    2.732   11.512    0.000
```

```
fit_med_3 <- lavaan::sem(model = mod_med_3,
                         data = df_inc,
```

```
                          missing = "fiml",
                          fixed.x = FALSE)

summary(fit_med_3)

lavaan 0.6.16 ended normally after 24 iterations

  Estimator                                         ML
  Optimization method                           NLMINB
  Number of model parameters                         9

  Number of observations                           266
  Number of missing patterns                         2

Model Test User Model:

  Test statistic                                 0.000
  Degrees of freedom                                 0

Parameter Estimates:

  Standard errors                             Standard
  Information                                 Observed
  Observed information based on                Hessian

Regressions:
                   Estimate  Std.Err  z-value  P(>|z|)
  fav_pharm_avg ~
    kadds_tot (cp)    0.866    0.309    2.804    0.005
  asq_avg ~
    kadds_tot  (a)    0.004    0.005    0.773    0.440
  fav_pharm_avg ~
    asq_avg    (b)    9.517    3.481    2.734    0.006

Intercepts:
                   Estimate  Std.Err  z-value  P(>|z|)
   .fav_pharm_avg    11.740   10.872    1.080    0.280
   .asq_avg           2.475    0.117   21.173    0.000
    kadds_tot        20.767    0.344   60.285    0.000

Variances:
                   Estimate  Std.Err  z-value  P(>|z|)
   .fav_pharm_avg   795.522   68.981   11.532    0.000
   .asq_avg           0.247    0.021   11.533    0.000
    kadds_tot        31.452    2.732   11.512    0.000

Defined Parameters:
                   Estimate  Std.Err  z-value  P(>|z|)
    ab                0.040    0.054    0.743    0.457
    total             0.906    0.313    2.896    0.004
```

Session Information

```
sessionInfo()

R version 4.3.2 (2023-10-31)
Platform: aarch64-apple-darwin20 (64-bit)
Running under: macOS Sonoma 14.4

Matrix products: default
BLAS:   /Library/Frameworks/R.framework/Versions/4.3-arm64/Resources/li
b/libRblas.0.dylib
LAPACK: /Library/Frameworks/R.framework/Versions/4.3-arm64/Resources/li
b/libRlapack.dylib;  LAPACK version 3.11.0

locale:
[1] en_US.UTF-8/en_US.UTF-8/en_US.UTF-8/C/en_US.UTF-8/en_US.UTF-8

time zone: America/New_York
tzcode source: internal

attached base packages:
[1] stats     graphics  grDevices utils     datasets  methods   base

other attached packages:
 [1] tinytex_0.47     lavaan_0.6-16    furniture_1.9.14 psych_2.3.9
 [5] naniar_1.0.0     lubridate_1.9.3  forcats_1.0.0    stringr_1.5.0
 [9] dplyr_1.1.3      purrr_1.0.2      readr_2.1.4      tidyr_1.3.0
[13] tibble_3.2.1     ggplot2_3.4.3    tidyverse_2.0.0  readxl_1.4.3

loaded via a namespace (and not attached):
 [1] gtable_0.3.4      xfun_0.40         visdat_0.6.0      lattice_0.21
-9
 [5] tzdb_0.4.0        quadprog_1.5-8    vctrs_0.6.3       tools_4.3.2
 [9] generics_0.1.3    stats4_4.3.2      parallel_4.3.2    fansi_1.0.4
[13] pkgconfig_2.0.3   Matrix_1.6-1.1    rematch_2.0.0     lifecycle_1.
0.3
[17] compiler_4.3.2    farver_2.1.1      munsell_0.5.0     mnormt_2.1.1
[21] janitor_2.2.0     snakecase_0.11.1  htmltools_0.5.6.1 yaml_2.3.7
[25] pillar_1.9.0      MASS_7.3-60       nlme_3.1-163      tidyselect_1
.2.0
[29] digest_0.6.33     stringi_1.7.12    pander_0.6.5      labeling_0.4
.3
[33] splines_4.3.2     fastmap_1.1.1     grid_4.3.2        colorspace_2
.1-0
[37] cli_3.6.1         magrittr_2.0.3    utf8_1.2.3        pbivnorm_0.6
.0
[41] withr_2.5.1       scales_1.2.1      timechange_0.2.0  rmarkdown_2.
25
[45] gridExtra_2.3     cellranger_1.1.0  hms_1.1.3         evaluate_0.2
2
[49] knitr_1.44        UpSetR_1.4.0      mgcv_1.9-0        rlang_1.1.1
```

```
[53] isoband_0.2.7     Rcpp_1.0.11       glue_1.6.2        rstudioapi_0
.15.0
[57] R6_2.5.1          plyr_1.8.9
```

Package Citations

APA citations for all packages used were generated within R for documentation purposes within the manuscript.

```
citation("psych")

To cite package 'psych' in publications use:

  William Revelle (2023). _psych: Procedures for Psychological,
  Psychometric, and Personality Research_. Northwestern University,
  Evanston, Illinois. R package version 2.3.9,
  <https://CRAN.R-project.org/package=psych>.

A BibTeX entry for LaTeX users is

  @Manual{,
    title = {psych: Procedures for Psychological, Psychometric, and Per
sonality Research},
    author = {{William Revelle}},
    organization = {Northwestern University},
    address = {Evanston, Illinois},
    year = {2023},
    note = {R package version 2.3.9},
    url = {https://CRAN.R-project.org/package=psych},
  }

citation("lavaan")

To cite lavaan in publications use:

  Yves Rosseel (2012). lavaan: An R Package for Structural Equation
  Modeling. Journal of Statistical Software, 48(2), 1-36.
  https://doi.org/10.18637/jss.v048.i02

A BibTeX entry for LaTeX users is

  @Article{,
    title = {{lavaan}: An {R} Package for Structural Equation Modeling}
,
    author = {Yves Rosseel},
    journal = {Journal of Statistical Software},
    year = {2012},
    volume = {48},
    number = {2},
    pages = {1--36},
```

```
  doi = {10.18637/jss.v048.i02},
}
```

VITAE

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EDUCATION

Doctor of Philosophy in Psychology August 2024 (*anticipated*)
Emphasis: School Psychology
Utah State University, Logan, Utah

Predoctoral Psychology Resident August 2023 – Present
Specialty Track: Clinical Child Psychology
Mailman Center for Child Development
University of Miami Miller School of Medicine
Miami, Florida

Master of Science May 2021
Emphasis: School Psychology
Utah State University, Logan, Utah

Bachelor of Science May 2018
Major: Psychology, with Honors
Southern Utah University, Cedar City, Utah

CLINICAL CERTIFICATIONS

Autism Diagnostic Observation Schedule, Second Edition (ADOS-2) Clinical Workshop. Utah State University, Logan, Utah, 2019.

CLINICAL EXPERIENCE

Examiner, Interdisciplinary Developmental Evaluation Service August 2023 – Present
Mailman Center for Child Development
University of Miami Miller School of Medicine
Miami, Florida
Supervisor: Paula Perez, PsyD
Conduct psychological, psychoeducational, neurodevelopmental, and neuropsychological evaluations of children and adolescents in collaboration with an interdisciplinary team including developmental and behavioral pediatricians, occupational therapists, physical therapists, speech-language pathologists, and audiologists. Provided feedback to families regarding results, diagnosis, and recommendations.

Co-Therapist, Parent-Child Interaction Therapy (PCIT) August 2023 – Present
Mailman Center for Child Development

University of Miami Miller School of Medicine
Miami, Florida
Supervisor: Eileen Davis, PhD
Serve as a therapist providing PCIT services to caregivers and their children aged 2-7 for disruptive behavior problems, hyperactivity, and social-emotional difficulties. Conduct intake assessments, including a clinical interview and observational coding to determine appropriateness of PCIT curriculum. Coach parents to improve relationship enhancement skills, use differential attention, and implement behavior management techniques.

Consultant and Clinician, School Health Initiative August 2023 – Present
Mailman Center for Child Development
University of Miami Miller School of Medicine
Miami, Florida
Supervisors: Mileini Campaz-Pardo, MS, & Elizabeth R. Pulgaron, PhD
Provide consultation-liaison services and outpatient therapy in a school-based integrated primary care clinic in a Title I public high school using cognitive behavioral therapy and dialectical behavior therapy skills.

Clinician, Pediatric Psychology Clinic – Clinical Child Emphasis August 2023 – Present
Mailman Center for Child Development
University of Miami Miller School of Medicine
Miami, Florida
Supervisor: Allison Weinstein, PhD
Provide individual outpatient therapy to children and adolescents for disruptive behavior problems and internalizing concerns using parent management training and cognitive-behavioral therapy.

Psychology Extern, Integrated Assessment Division 2020 – 2023
Sorenson Center for Clinical Excellence
Utah State University
Logan, Utah
Supervisors: Maryellen McClain, PhD, & Shelley R. Upton, PhD
Conducted interdisciplinary evaluations for children and adults with neurodevelopmental, behavioral, and emotional concerns. Administered, interpreted, and provided feedback to families regarding a range of cognitive, developmental, psychosocial, academic, and observational assessments. Lead a social skills group intervention for teens with autism.

Graduate Clinician, Behavioral Health Clinic 2021 – 2023
Sorenson Center for Clinical Excellence
Utah State University
Logan, Utah
Supervisor: Sara Boghosian, PhD, LP
Provided behavioral and psychotherapy services to clients ranging from childhood to adulthood for neurodevelopmental, social, emotional, behavioral, and elimination concerns. Used behavioral parent training, cognitive-behavioral therapy, dialectical

behavior therapy, and acceptance and commitment therapy approaches to address presenting concerns.

Graduate Clinician, McKay-Dee Behavioral Health Clinic 2022
Intermountain Health Care
Ogden, Utah
Supervisor: Bryan Bushman, PhD, LP
Conducted comprehensive neuropsychological evaluations for children and adolescents with neurodevelopmental, psychological, and neuropsychological conditions.

Behavior Specialist, Up-to-3 Early Intervention Services 2021 –2022
Logan, Utah
Supervisor: Gretchen Gimpel Peacock, PhD, LP
Provided in-home and telehealth behavior consultation and behavioral parent training services to parents of children up to 36 months of age. Collaborated with other disciplines, including speech-language pathology, occupational therapy, and nutrition, to develop coordinated intervention plans.

Graduate Clinician, Edith Bowen Laboratory School 2021
Logan, Utah
Supervisor: Maryellen McClain, PhD, NCSP, LP
Conducted comprehensive psychoeducational evaluations for special education eligibility and helped develop Individualized Education Programs for elementary school students.

Team Member, Autism Support Services 2020 –2021
Logan, Utah
Supervisor: Thomas S. Higbee, PhD, BCBA-D, LBA
Implemented applied behavior analysis (ABA) interventions in individual and group settings to preschool children with autism.

Graduate Clinician, Redwood Elementary School 2019 –2020
West Valley City, Utah
Supervisor: Laura M. Brunning, EdS
Conducted comprehensive psychoeducational evaluations for special education eligibility and helped develop Individualized Education Programs for elementary school students. Provided behavioral, social skills, and academic interventions to students.

SUPERVISORY AND MENTORSHIP EXPERIENCE
Peer Clinical Supervisor
Interdisciplinary Developmental Evaluation Service August 2023 – February 2024
Mailman Center for Child Development
University of Miami Miller School of Medicine
Miami, Florida
Supervisor: Paula Perez, PsyD

Supervise predoctoral practicum student in planning test batteries, administering assessments, and completing evaluation reports.

Integrated Assessment Division May 2021 – May 2023
Sorenson Center for Clinical Excellence
Utah State University
Logan, Utah
Supervisors: Maryellen McClain, PhD, & Shelley R. Upton, PhD
Peer reviewed interdisciplinary evaluation reports for practicum students prior to licensed psychologist review and gave feedback. Supervised practicum student case conceptualization and assessment planning.

Research Mentor
Autism and Neurodiversity (AND) Lab 2020 –2023
Utah State University, Indiana University
Logan, Utah
Supervisor: Maryellen McClain, PhD
Mentored undergraduate students in lab research activities (e.g., literature review, data collection) and the development and implementation of their own research projects.

PUBLICATIONS

Peer-Reviewed Articles

Published

2024

20. Quick, C., Harris, B., **Golson, M. E.,** McClain, M. B., Shahidullah, J. D. (2023). School-clinic care coordination to improve equitable and efficient autism identification. *Journal of Educational & Psychological Consultation,* DOI: 10.1080/10474412.2023.2262451

2023

19. Ficklin, E., Tehee, M., Marx, S., Ortiz, E., **Golson, M**., & Roanhorse, T. (2023). Perceptions of disabilities among Native Americans within the state of Utah. *Disability & Society,* DOI: 10.1080/09687599.2023.2195973
18. **Golson, M. E.,** Brunson McClain, M., O'Dell, S. M., Gormley, M. J., Roanhorse, T. T., Yang, N. J., Kettlewell, P., & Shahidullah, J. D. (2023). Assessment and Management of Attention-Deficit/Hyperactivity Disorder: Pediatric Resident Perspectives on Training and Practice. *Clinical Pediatrics*, DOI: 10.1177/00099228231163687
17. McClain, M. B., Schwartz, S. E., Bera, J. L., Farmer, R. L., Serang, S., Harris, B., & **Golson, M. E.** (2023). Vineland-3 Measurement Non-Invariance in Children With and Without Intellectual and Developmental Disabilities. *American Journal on Intellectual and Developmental Disabilities*, *128*(4), 334-343. DOI: 10.1352/1944-7558-128.4.334
16. **Golson, M. E.,** Benallie, K. J., Roanhorse, T. T., Haverkamp, C. R., Ficklin, E., McClain, M. B., & Aguilar, L. N. (2023). A Systematic Review of Indigenous Representation in School Psychology Research. *Canadian*

Journal of School Psychology, 38(3), 225-251. DOI: 10.1177/08295735221143820.

15. **Golson, M. E.,** McClain, M. B., Ha, J., Stigler, R., Bera, J., Kieffer, K. E. B., & Gibson, A. (2023). A Systematic Review of ADHD Knowledge Measures and Their Psychometric Support. *Journal of Pediatric Psychology, 48*(4), 356-374. DOI: 10.1093/jpepsy/jsac095
14. McClain, M. B., **Golson, M. E.,** Haverkamp, C. R., Harris, B., Ficklin, E., Schwartz, S. E., & Wynn, C. J. (2022). Caregiver perceptions of social communication and interaction: Development and validation of the SCIPS. *Journal of Autism and Developmental Disorders,* DOI: 10.1007/s10803-022-05840-4

2022

13. Ha, J., McClain, M. B., Covington, B., & **Golson, M. E.** (2022). Brief report: A brief video intervention for increasing autism knowledge in a general population sample. *Journal of Autism and Developmental Disorders*, DOI: 10.1007/s10803-021-05341-w
12. **Golson, M. E.,** McClain, M. B., Roanhorse, T. T., Domenech Rodríguez, M., Galliher, R. (2022). The experience of ADHD as reported by racially and ethnically minoritized adolescents: A survey-based phenomenological investigation. *Journal of Racial and Ethnic Health Disparities.* DOI: 10.1007/s40615-022-01436-x
11. **Golson, M. E.**, Roanhorse, T. T., McClain, M. B., Galliher, R. V., & Rodríguez, M. D. (2022). School-based ADHD services: Perspectives from Racially/Ethnically Minoritized Students. *Psychology in the Schools, 59*(4), 726-743. DOI: 10.1002/pits.22640
10. **Golson, M. E.**, Benallie, K., Benney, C. M., Schwartz, S., McClain, M. B., & Harris, B. (2022). Current state of autism knowledge in the general population of the United States. *Research in Autism Spectrum Disorders, 90.* DOI: 10.1016/j.rasd.2021.101886
9. **Golson, M. E.,** Ficklin, E., Haverkamp, C. R., McClain, M. B., & Harris, B. (2022). Cultural differences in social communication and interaction: A gap in autism research. *Autism Research, 15*(2), 208-214. DOI: 10.1002/aur.2657
8. McClain, M. B., **Golson, M. E.,** Murphy, L. E. (2022). Executive functioning skills in early childhood children with autism, intellectual disability, and co-occurring autism and intellectual disability. *Research in Developmental Disabilities, 122.* DOI: 10.1016/j.ridd.2021.104169

2021

7. **Golson, M. E.**, Haverkamp, C. R., McClain, M. B., Schwartz, S. E., Ha, J., Harris, B., & Benallie, K. J. (2021). Influences of student race/ethnicity and gender on autism special education classification considerations. *Autism*. DOI: 10.1177/13623613211050440
6. McClain, M. B., Callan, G., Harris, B., Floyd, R. G., **Golson, M. E.,** Haverkamp, C. R., Longhurst, D. N., Benallie, K. J. (2021). Methods for Addressing Publication Bias in School Psychology Journals: A Descriptive Review

of Meta-Analyses from 1980 to 2019. *Journal of School Psychology.* DOI: 10.1016/j.jsp.2020.11.002

2020

5. McClain, M. B., Harris, B., Schwartz, S. E., & **Golson, M. E.** (2020). Differential item functioning in the autism spectrum rating scales: A follow up to evaluation of the autism spectrum rating scales in a diverse, non-clinical sample. *Journal of Psychoeducational Assessment.* DOI: 10.1177/0734282920945529
4. McClain, M. B., Harris, B., Haverkamp, C. R., **Golson, M. E**., & Schwartz, S. E. (2020). The ASKSP Revised (ASKSP-R) as a Measure of ASD Knowledge for Professional Populations. *Journal of Autism and Developmental Disorders, 50*(3), 998-1006. DOI: 10.1007/s10803-019-04321-5

2019

3. McClain, M.B., Harris, B., Schwartz, S., & **Golson, M. E**. (2019). Evaluation of the autism spectrum rating scales in a diverse, non-clinical sample. *Journal of Psychoeducational Assessment, 38*(6), 740-752. DOI: 10.1177/0734282919880051
2. McClain, M. B., Harris, B., Schwartz, S., Benallie, K. J., **Golson, M. E**., & Benney, C. M. (2019). Brief report: Development and validation of the autism spectrum knowledge scale – general population: Preliminary analyses. *Journal of Autism and Developmental Disorders, 49*(7), 3007-3015. DOI: 10.1007/s10803-019-04019-8
1. McClain, M. B., Harris, B., Schwartz, S., Haverkamp, C. R., & **Golson, M. E**. (2019). Development and validation of the autism spectrum knowledge scale – professional version: Preliminary analyses. *Open Science Framework.*

Revised & Resubmitted

3. **Golson, M. E.,** McClain, M. B., Harris, B., Schwartz, S. E., Gabrielsen, T. (in review). Measuring autism symptomology in boys and girls: Investigating measurement invariance of the Autism Spectrum Rating Scales across gender.
2. Haverkamp, C. R., Roanhorse, T. T., McClain, M. B., Harris, B., Bakner, K. E., Benney, C. M., & **Golson, M. E.** (in review). How does culture impact school-based autism evaluations? Perspectives from school psychologists.
1. McClain, M. B., **Golson, M. E.,** Norfolk, P. A., Vohs, A. M., & Murphy, L. E. (in review). Item endorsements on the Social Communication Questionnaire among Black and White caregivers of children who have developmental disabilities.

In Review

5. Wynn, C. J., McClain, M. B., Roanhorse, T. T., **Golson, M. E.,** Harris, B., Bera, J., & Shahid, R. (in review). Culture impacts the perceived importance of social communication and interaction skills.

4. **Golson, M. E.,** McClain, M. B., & McMahon, C. (in review). Selecting and reporting autism knowledge measures in research.
3. **Golson, M. E.,** Bera, J., Kim, J., Williams, S., McClain, M. B., Schwartz, S. E., Harris, B., Sullivan, A. (in review). Racial and Gender Bias in School Psychologists' Special Education Classification Considerations.
2. Haverkamp, C. R., McClain, M. B., & **Golson, M. E.** (in review). An App-Based Early Academic Skills Intervention for Children with Autism.
1. McClain, M. B., **Golson, M. E.,** Haverkamp, C. R., Ryan, T., Harris, B., McMahon, C., Campbell, J. M., Ha, J., Bakner, K., Bera, J. (in review). Autism Knowledge Publication Trends.

Book Chapters

1. Bundock, K., Simonsmeier, V., **Golson, M. E**., Covington, B., McClain, M. B. (2020). Promoting academic success. In M. B. McClain, J. D. Shahidullah, & K. R. Mezher (Eds.), *Handbook of interprofessional care for pediatric ASD.* Springer.

CONFERENCE PRESENTATIONS

2024

25. Golson, M. E., Bera, J., Palmer, J., Roanhorse, T. T., McClain, M. B., & Harris, B. (2024). *Autism knowledge of preservice teachers.* Poster accepted for the annual meeting of the National Association of School Psychologists in New Orleans, Louisiana.
24. Thomas, C., Beckman, P. S., & Golson, M. E. (2024). *School psychologists' engagement in best practice autism assessment.* Poster accepted for the annual meeting of the National Association of School Psychologists in New Orleans, Louisiana.

2023

23. Ha, J., McClain, M. B., **Golson, M. E.,** & Christensen, H. (2023). *Brief interventions for increasing autism knowledge: Effectiveness of different delivery methods*. A poster presented at the American Psychological Association convention in Washington, D. C.
22. Roanhorse, T. T., Bera, J., McClain, M. B., Wynn, C., & **Golson, M. E.** (2023). *Cross-cultural differences in perceived importance of social communication/interaction skills.* A paper accepted for the annual meeting of the National Association of School Psychologists in Denver, Colorado.

2022

21. **Golson, M. E.,** Ha, J., McClain, M. B. (2022). *The Role of Race/Ethnicity and Gender on Autism Special Education Identification.* A paper presented in symposia at the Division 33 meeting during the American Psychological Association convention in Minneapolis, Minnesota.
20. **Golson, M.E.,** Bera, J., Kim, J., Williams, S. (2022). *Implicit Bias and School Psychologists' Special Education Eligibility Considerations.* Poster

accepted for American Psychological Association convention in Minneapolis, Minnesota.

19. McClain, M. B., & **Golson, M. E.** (2022). *Evidence-Based School Assessments for Autism.* Presentation accepted for the Brigham Young University Autism Workshop in Provo, Utah.
18. Bera, J., **Golson, M. E.,** McClain, M. B., & Farmer, R. (2022). *Testing Measurement Invariance in the Vineland 3*. Poster accepted for the annual meeting of the National Association of School Psychologists in Boston, Massachusetts.
17. **Golson, M. E.**, McClain, M. B., & Roanhorse, T. R. (2022). *Experiences With ADHD and Related Services Voiced by Diverse Students.* Paper accepted for the annual meeting of the National Association of School Psychologists in Boston, Massachusetts.
16. Roanhorse, T. T., & **Golson, M. E**. (2022). *Perspectives from Practitioners: The Impact of Culture on Autism Evaluations.* Paper accepted for the annual meeting of the National Association of School Psychologists in Boston, Massachusetts.
15. Roanhorse, T. T., & **Golson, M. E.** (2022). *Modifications and Adaptations of the ADOS-2 with Minoritized Students.* Poster accepted for the annual meeting of the National Association of School Psychologists in Boston, Massachusetts.

2021

14. **Golson, M**. **E**., Benallie, K. J., McClain, M. B., Harris, B., & Haverkamp, C. R. (2021). *Measuring parent perceptions of social communication and interaction across cultures.* Poster accepted for the virtual meeting of the American Psychological Association, Division 33.
13. **Golson, M. E**., McClain, M. B., & Schwartz, S. E. (2021). *Measurement Invariance of the Conners-3*. Poster accepted for the virtual meeting of the American Psychological Association, Division 16.
12. Longhurst, D., **Golson, M. E.**, Benallie, K. J., McClain, M. B., & Callan, G. (2021). *An Examination of Publication Bias in School Psychology Journals*. Poster accepted for the virtual meeting of the American Psychological Association, Division 16.
11. **Golson, M. E.,** McClain, M. B., Schwartz, S. E., Bakner, K. E., Gabrielsen, T., & Harris, B. (2021). *Measurement Invariance across Gender of the ASRS in a Non-Clinical Diverse Sample*. Poster accepted for the virtual meeting of the International Society of Autism Research.
10. **Golson, M. E.,** McClain, M. B., & Murphy, L. E. (2021). *Executive Functioning Skills in Early Childhood: Comparing Children with ASD, ID, and Co-Occurring ASD and ID*. Poster accepted for the virtual meeting of the International Society of Autism Research.

2020

9. Benallie, K. J., **Golson, M. E.,** Roanhorse, T., Haverkamp, C. R., & McClain, M. B. (2020). *A systematic review of American Indian Students in School Psychology Research*. Poster accepted for the meeting of the National Association of School Psychologists in Baltimore, Maryland.

8. Benney, C. M., **Golson, M. E.,** & McClain, M. B. (2020). *App-based mindfulness interventions for students with and without disabilities.* Poster accepted for the meeting of the National Association of School Psychologists in Baltimore, Maryland.
7. **Golson, M. E**., Benallie, K. J., Benney, C. M., McClain, M. B., Harris, B., & Muncy, M. (2020). *Knowledge of autism spectrum disorder among school-based professionals.* Paper accepted for the meeting of the National Association of School Psychologists in Baltimore, Maryland.
6. Haverkamp, C. R., & **Golson, M. E**. (2020). *An app-based early academic skills intervention for children with ASD.* Poster accepted for the meeting of the National Association of School Psychologists in Baltimore, Maryland.

2019

5. Benallie, K., **Golson, M. E.,** McClain, M. B., & Harris, B. (2019). *Current state of ASD knowledge in the general population.* Poster presented at the meeting of the International Society of Autism Research in Montreal, Canada.
4. **Golson, M**. **E.**, McClain, M. B., & Harris, B. (2019). *Construct validity of the ASRS in a non-clinical diverse sample.* Poster presented at the meeting of the International Society for Autism Research in Montreal, Canada.
3. **Golson, M. E**. (2019). *ADHD Service provision for racial/ethnic minorities: A review*. Poster presented at the meeting of the Rocky Mountain Psychological Association. Denver, Colorado.
2. **Golson, M. E**., Haverkamp, C. R., & McClain, M. B. (2019) *Effectiveness of a letter-writing app intervention for children with ASD.* Poster presented at the meeting of the National Association of School Psychologists. Atlanta, Georgia.
1. Benallie, K., Benney, C. M., **Golson, M. E.,** McClain, M. B., Harris, B., & Peacock, G. G. (2019). *Knowledge of ASD in the general and parent populations.* Paper presented at the meeting of the National Association of School Psychologists. Atlanta, Georgia.

GRANTS

External

2022

2. **Golson, M. E.**, McClain, M. B. (2022). ADHD Knowledge: Support for Current Measures and Connections to Stigma and Intervention. *Psi Chi Graduate Research Grant.* Funded: $1,200.

2020

1. **Golson, M. E.,** McClain, M. B. (2020). Measurement Invariance of the Conners-3. *Psi Chi Graduate Research Grant*. Funded: $1,500.

Internal

2023

3. **Golson, M. E.**, McClain, M. B. (2022). ADHD Knowledge: Support for Current Measures and Connections to Stigma and Intervention. *Utah State University*

College of Education and Human Services Graduate Student Research Award. Funded: $4,000.

2020

2. **Golson, M. E.,** McClain, M. B. (2020). Measurement Invariance of the Conners-3. *Graduate Research and Creative Opportunities Grant, Utah State University*. Funded: $1,000.

2019

1. **Golson, M. E.**, McClain, M. B. (2019). The experience of ADHD as reported by racially and ethnically minoritized adolescents. *Utah State University College of Education and Human Services Graduate Student Research Award.* Funded: $2,000.

Unfunded

2023

3. **Golson, M. E.**, McClain, M. B. (2022). ADHD Knowledge: Support for Current Measures and Connections to Stigma and Intervention. *APF Violet and Cyril Franks Scholarship*. Unfunded ($5,000).
2. **Golson, M. E.**, McClain, M. B. (2023). ADHD Knowledge: Support for Current Measures and Connections to Stigma and Intervention. *Routh Dissertation Grant.* Unfunded ($2,500).

2022

1. **Golson, M. E.**, McClain, M. B. (2022). ADHD Knowledge: Support for Current Measures and Connections to Stigma and Intervention. *Society for the Study of School Psychology Dissertation Grant Award.* Unfunded ($5,000).

TEACHING EXPERIENCE

Courses Taught

Research Design (PSY 3500), Undergraduate — Spring 2022
Utah State University

Teaching Assistantships

Multicultural Psychology (PSY 4240), Undergraduate — Fall 2018, Spring 2021
Utah State University

Introduction to Psychology (PSY 1010), Undergraduate — Fall 2018, Spring 2021
Utah State University

Psychological Statistics (PSY 3010), Undergraduate — Fall 2020
Utah State University

Social Psychology (PSY 3510), Undergraduate — Spring 2019, Fall 2019
Utah State University

Health Psychology (PSY 3110), Undergraduate — Spring 2019
Utah State University

RELEVANT WORK EXPERIENCE

Research Assistant 2019 –2023
Autism and Neurodiversity (AND) Lab
Utah State University, Indiana University
Logan, Utah

Utah State University Institutional Review Board Assistant August 2022 – June 2023
Utah State University
Logan, Utah

SERVICE AND LEADERSHIP

Long-Term Trainee August 2023 – present
Leadership and Education in Neurodevelopmental and Related Disabilities (LEND)
Mailman Center for Child Development
University of Miami Miller School of Medicine

Advanced Autism Trainee 2021 – 2022
Utah Regional Leadership in Education in Neurodevelopmental and Related Disabilities (URLEND)

Long Term Trainee 2020-2021
Utah Regional Leadership in Education in Neurodevelopmental and Related Disabilities (URLEND)

Doctoral Student Representative 2022 – 2023
Utah State University

Project LAUNCH Interdisciplinary Training Team Member 2021
Utah State University

ADOS-2 Training Planning Committee 2021
Utah State University

School Psychology Graduate Student Mentor 2019 – 2021
Utah State University

Student Affiliates of School Psychology (SASP) Chapter Secretary 2019 – 2020
Utah State University

Proposal Reviewer 2020
National Association of School Psychologists

SASP Professional Development Committee Member 2018 – 2019
Utah State University

HONORS AND SCHOLARSHIPS

Edwin B. Newman Graduate Research Award 2023
American Psychological Association and Psi Chi

Walter R. Borg Scholarship: Applied Practice and Research Award 2022
Utah State University Psychology Department

Trainers of School Psychologists Graduate Student Scholarship 2022
Trainers of School Psychologists

APA Division 16 Student Poster Blue Ribbon Award 2021
American Psychological Association Division 16

Kenneth W Merrell Scholarship 2020
Utah State University Psychology Department

LaPray Scholarship 2019
Utah State University Psychology Department

Carolyn & Edward Rondthaler Prize in Psychology 2018
Southern Utah University Psychology Department

PROFESSIONAL MEMBERSHIPS

2023 – present	Associate member of the National Register
2019 – present	Student member of the International Society for Autism Research
2019 – present	Student member of the American Psychological Association
2018 – present	Member of the National Association of School Psychologists