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Appalachian Parent Perceptions of ADHD Symptomology

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Appalachian Parent Perceptions of ADHD Symptomology

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APPROVAL OF THESIS

We, the faculty supervising the work of Shaina Lee Meadows, affirm that the thesis, *Parent Perceptions of ADHD Symptomology*, meets the high academic standards for original scholarship and creative work established by the School Psychology Program and the College of Education. This work also conforms to the editorial standards of our discipline and the Graduate College of Marshall University. With our signatures, we approve the manuscript for publication.

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ii

TABLE OF CONTENTS

List of Tables iv
List of Figures v
Abstract vi
Chapter 1: Literature Review 1
Normal Development and ADHD Symptoms 2
ADHD and Other Disorders 3
Misdiagnosis 5
Parent Perceptions of ADHD Symptoms and Treatment 6
Current Study 9
Chapter 2: Method 11
Participants 11
Materials 12
Procedure 13
Chapter 3: Results 14
Research Question 1 14
Research Question 2 14
Research Question 3 19
Research Question 4 22
Chapter 4: Discussion 24
References 27
Appendix A 31
Appendix B 32
Appendix C 38
Appendix D 41

LIST OF TABLES

1 Parent Perceptions on ADHD Treatment……...…16

2 Education Impact on Parent Perceptions of ADHD Treatment…….17

3 Gender Impact on Parent Perceptions of ADHD Treatments……18

4 Impact of ADHD training on Parent Perceptions of ADHD Treatment……19

LIST OF FIGURES

1 Symptoms perceived to be characteristic of ADHD……..20

ABSTRACT

Attention-deficit/hyperactivity disorder (ADHD) is the most widely documented referral concern among children and adolescents referred to mental health practitioners. The current study examined Appalachian parents' (N=68) knowledge of ADHD, accuracy in identifying ADHD symptoms, and treatment preferences. Findings of the survey indicate the majority of parents received no training on ADHD; however, most were able to recognize the majority of the signs of ADHD. Equally important, parents of children with ADHD and those who reported receiving some form of ADHD training demonstrated a negligible advantage in correctly identifying ADHD symptoms. Results, moreover, showed a significant preference for discipline as a treatment option for ADHD when parents had one or more children diagnosed with ADHD. Additional research into parent knowledge of ADHD symptomology and preferences is essential throughout the Appalachian region, given the high ADHD prevalence rates and high percentages of school age children receiving special education.

CHAPTER 1

LITERATURE REVIEW

Attention-deficit hyperactivity disorder (ADHD) is a developmental disorder characterized by attention difficulty, hyperactivity, and impulsiveness (National Institute of Mental Health, 2012). According to the DSM-5, the behaviors characteristic of ADHD must be present in multiple settings (e.g. school and home) and adversely impact performance in education, social or work settings (American Psychological Association, 2013). The symptoms of ADHD are divided into two categories: 1) inattention and 2) hyperactivity and impulsivity. Typical behaviors include failure to pay close attention to details, difficulties organizing tasks, excessive talking, inability to remain seated in appropriate situations, and fidgeting. In order to be diagnosed, children must have at least six symptoms from either or both categories. Using the DSM-5, the individual must have several lasting symptoms present before the age of 12 (2013).

ADHD affects about 3 to 5 percent of children globally, and about 11% of children aged 4-17 were diagnosed with ADHD in the United States (U.S.) (Centers for Disease Control, 2014). Parent-reported diagnosis rates have been on the rise from 7.8% in 2003 to 9.5% in 2007 to the current level of 11.0% (Centers for Disease Control, 2014). According to the Centers for Disease Control (CDC) (2014), the Appalachian region maintains some of the highest prevalence rates of ADHD in the United States. For example, West Virginia and Ohio have prevalence rates of 11.8% and 14.2%, respectively.

Differentially high rates suggest over-identification may be a concern in some regions. Misdiagnosis can stem from many causes such as parent misinterpretation of symptoms, which could lead to higher incidence rates in the Appalachian region (Hartnett, Nelson, & Rinn, 2004).

Research shows that most parents admit to having little to no knowledge about ADHD and its symptoms (Huchinson et. al, 2001). Further, normal developmental behaviors as well as other disorders often overlap with ADHD symptoms (Feldman & Reiff, 2014). Anxiety, bipolar, and oppositional defiant disorder all share symptoms similar to ADHD. The DSM-5 notes differences in ADHD prevalence rates across regions; these can be attributed to factors such as variation in attitudes or tolerance towards certain behaviors in children, different diagnostic practices, and the cultural group of the child and the informant (American Psychological Association, 2013). Any one of these factors could contribute to the higher prevalence rates in the region.

The present study examined Appalachian parent knowledge of ADHD symptoms and the influence of education, gender, number of children with ADHD, and training status on accuracy of symptom identification and ADHD treatment preference. In order to have an accurate diagnosis, the child must be presenting symptoms not only at school but at home as well (American Psychological Association, 2013). If parents are informed of what to look for they would be able to more accurately provide information to school personnel, such as the school psychologist to aid in referral and identification.

Normal Development and ADHD Symptoms

In order to obtain an accurate diagnosis, it is important to obtain information from parents and teachers about the child's symptoms in everyday life (Rasheed, Fathima, & Altaf, 2013). Non-disabled children sometimes display some symptoms of ADHD during their development, such as hyperactivity or inattention which can often make ADHD diagnosis difficult (Chae, Kim, & Noh, 2003). Hutchinson and colleagues (2001) explored the idea of whether or not parents are able to accurately perceive hyperactivity in their child. Parents were only able to accurately

perceive hyperactivity in a child about half of the time (2001). Hutchinson et. al. (2001) concluded that parents mistook normal developmental behaviors as hyperactivity frequently.

Curchack-Lichtin and Chacko (2013) used the example of preschool children being more active than older children but most normalize with age. While in contrast, children with ADHD will display hyperactivity throughout development in the preschool and early elementary years (2013). Whether or not a behavior is considered problematic and worth getting professional help often depends on a parent's "threshold" (Bussing, Gary, Mills, & Garvan, 2003). Bastra, Hadders-Algra, Nieweg, Vantol, Pijl, and France (2012) state that many societal factors such as both parents in the household working can increase the burden of daily living which can decrease their level of tolerance for certain behavior in children, whether those behaviors are a result of normal development of ADHD (2012).

ADHD and Other Disorders

Some research indicates parents and teachers can mistakenly attribute children's behaviors as ADHD symptoms due to the overlap in behavioral characteristics between ADHD and other neurodevelopmental disorders and exceptionalities. In one study, most of the participating parents described ADHD as problematic behaviors (Ho, Chien, & Wang, 2011). Toward this end, children who are gifted can exhibit similar behaviors to those who are identified with ADHD. According to Flint (2001) gifted children often display behaviors called "overexcitabilities" (OEs) that can be misinterpreted for ADHD. Overexcitabilities are defined as innate amplifications or sensitivities around a subject or object of interest that causes the child to react in an intense way. These overexcitabilities can present as a student who invests intense energy or focus on a subject area of interest while demonstrating significantly less effort in other

academic areas (2001). In his seminal research, Kazimierz Dabrowski identified five areas of overexcitability (Piechowski, 1991); however, one area, psychomotor overexcitability, is particularly prone to being misdiagnosed as ADHD.

As another example, Milberger et al. (1995) found the manic symptoms children with bipolar disorder exhibit also resemble the behavioral characteristics of ADHD. An individual having a manic episode may pace/fidget, speak rapidly, and/or display distractibility (American Psychological Association, 2013). Observing these symptoms in one context could easily lead one to attribute the behaviors to ADHD. Additionally, three symptoms of major depressive disorder criteria are similar to the ADHD criteria (1995). For example, one with major depressive disorder may exhibit a diminished ability to think or concentrate on activities (American Psychological Association, 2013). In the classroom setting this symptom could be easily mistaken for the inattentiveness of ADHD.

Oppositional defiant disorder (ODD) is another disorder that can be mistaken for ADHD due to overlapping symptoms. "Individuals with oppositional defiant disorder may resist work or school tasks that require self-application because they resist conforming to others' demands" (American Psychological Association, 2013). Refusal to complete school work could be easily mistaken as inability to pay attention, when in reality the student just does not want to comply with what the teacher has requested. Children with ODD exhibit behavior characterized by negativity, hostility, and defiance (2013). These type of behaviors are not characteristic of ADHD. It is also worth noting that in the general population ODD co-occurs with ADHD in around half of children with the combined presentation of symptoms (2013).

There are many other disorders that also share specific symptoms characteristic of ADHD, such as anxiety disorders and specific learning disorders. A child with a specific learning disability may appear inattentive because of frustration, lack of interest, or because of limited ability. This is similar to ADHD in that there is an effect on academic work. However, those with ADHD are also affected outside of school which is not the case with a specific learning disability (American Psychological Association, 2013). Those with anxiety disorder exhibit symptoms of inattention like those with ADHD. However, those with an anxiety disorder are inattentive due to worry and rumination. Restlessness is also a common characteristic anxiety disorders and ADHD also share (2013). Due the fact that ADHD shares many characteristics with other disorders, it is important to differentiate between them for accurate diagnosis. Comorbidity of disorders diagnosed in an individual could cause a child to exhibit several symptoms of ADHD, while in reality they have two separate disorders with common symptoms.

Misdiagnosis

The Centers for Disease Control (2014) reports ADHD prevalence rates in certain areas in the U.S. are disproportionately higher than the national average. In 2011, 11% of the nation's children were diagnosed with ADHD. However, many states and regions located in Appalachia reported significantly higher diagnosis rates. Kentucky had a prevalence rate of 18.7%. During this same year, Tennessee, North Carolina, West Virginia, and Pennsylvania had rates of 15.2%, 14.4%, 11.7%, and 11.2%, respectively (Centers for Disease Control, 2014). Parent-reported ADHD rates have risen at an alarming rate since 2003 wherein the average rate was 7.8% to 11.0% in 2011 (Visser et al., 2014). Clements, Polaha, Dixon, and Brownlee (n.d.) conducted a study in Appalachia suggesting physicians in rural practices often collected less empirically supported parent and teacher data. The study explored whether or not the differences were due to

the type of medical care available to those in rural areas. They found that those in rural areas more often had access to only a family physician rather than a pediatrician. Zeiner (1997) stated that no single assessment tool should be relied to conclusively diagnose ADHD. Clements, Polaha, Dixon, and Brownlee (n.d) found pediatricians often have access to more specialized assessment measures and the pediatricians were more likely to adhere closely to the DSM-IV guidelines.

ADHD is one of the most common reasons a child is referred to mental health professionals (Hartnett, Nelson, & Rinn, 2004). Hartnett, Nelson, and Rinn (2004) also stated that it is not uncommon to hear of the misdiagnosis of ADHD when a child's behaviors have been attributed erroneously to ADHD rather than considering other conditions. Therefore, it is important for parents to understand the symptoms of ADHD and how they present in a child. Limited access to continuing education is attributed as a factor contributing to the higher diagnosis rates in Appalachia (Clements, Polaha, Dixon, & Brownlee, n.d). Lack of experience and knowledge can cause confusion when interpreting symptoms that a child is presenting. Many disorders share common characteristics with ADHD, such as anxiety disorders, learning disabilities, intellectual disabilities, oppositional defiant disorder and so forth. However, these disorders have different underlying reasons for their common symptoms. According to the DSM-5, one should also consider medication-induced symptoms of ADHD. If a child is on medication it is possible that symptoms of inattention, hyperactivity, or impulsivity may arise as a side-effect from its use (American Psychological Association, 2013).

Parent Perceptions of ADHD Symptoms and Treatment

Parents acquire knowledge of ADHD from many different sources. Bussing and colleagues (2012) found parents relied upon medical professionals, the internet, and "social

network" as their main sources of information with the most preferred source being the internet. They also found parents had little interest in "written" forms of information (2012). These results contrast with a previous study conducted by Bussing, Schoenburg, and Perwien (1998), which indicated parents preferred the provision of ADHD information and expertise from medical professionals. Bussing, and colleagues Zima, Mason, Meyer, White, and Garvan's (2012) study found parents who listed social media as their source were more likely to attribute ADHD to consuming too much sugar (2012). Bussing and colleagues' (2012) study illustrates how different information sources can influence parent perceptions of ADHD including the purported cause of the disorder; it additionally addressed concerns regarding parent overreliance on the internet as the sole source of ADHD-specific information as this source of information leads to consumer vulnerability and misinformation (Bussing et. al., 2012)

Bussing et al.'s (2003) findings revealed less than half of respondents in a nationally representative adult study were able identify correctly the symptoms of ADHD from a vignette and ADHD symptoms were rated less serious than depression symptoms. Results additionally showed many parents held beliefs that ADHD was caused by substance abuse, low effort, and inadequate parenting (2003). Results indicated half of parents from higher SES backgrounds tended to think their child had "problem behaviors" rather than use the medical label ADHD (2003). Parents of lower SES backgrounds tended to label their children as having a medical condition (2003).

Parents and teachers may pressure professionals for a diagnosis because of the merits a label can give (Bastra et.al., 2012). They also found that the beliefs parents held about what was causing their child's misbehavior had an impact on whether or not they chose to pursue intervention (Bussing et.al., 2003). Pajo and Cohen (2013) conducted a study of parent reactions

and awareness of ADHD and its diagnosis. Parents were found to have varying views about ADHD and its causes. Some parents explained ADHD as a biological condition that was out of their child's control, while others described the condition as a result of poor parenting. Other parents reported difficulties of making sense of the condition overall (Pajo, and Cohen, 2013). When asked if parents believed that medication for ADHD was overprescribed, half responded in agreement (2013). Correct diagnosis could be affected by parent views on ADHD causes.

Curchack-Litchin and Chacko (2013) studied the idea that certain ADHD symptoms are endorsed based on the age of the child. Their results showed that certain behaviors were endorsed as symptoms of ADHD depending on age of the child. For example, 50% of parents in the study endorsed their child as being careless at preschool age. The endorsement rate of carelessness as a symptom increased as the child got older (Bussing et.al, 2012). Elder (2010) conducted a similar study based on endorsement of ADHD symptoms and the age of the child. Willoughby, Pek, and Greenberg (2012) found that parents sometimes report symptoms of ADHD but those behaviors are only temporary. They also asserted classroom expectations and structure vary as the child gets older. An "ADHD-like" behavior a child exhibits at home or in one classroom may not be displayed in a different classroom environment (2012).

Johnston, Hommerson, and Seipp (2008) conducted a study examining mothers' perceptions regarding the social validity of behavioral and pharmacological treatments for ADHD. All mothers in this study had sons with an ADHD diagnosis. Results showed mothers rated behavioral parent training to be more acceptable than medication. Their preference for behavioral training related to their overall perceived belief in these strategies as well as how effective the strategies were with their own children (2008). Consequently, personal experience seems to influence parent perceptions on the social acceptability of a treatment as well as their

preference. In a study conducted on parent willingness to use ADHD treatments, willingness to use pharmacological ADHD treatment was increased when parents felt knowledgeable on the subject (Bussing et. al, 2012). Bussing and colleagues (2012) found similar results with willingness to use psychosocial ADHD treatments. This suggest that parents who have little to no knowledge or training on ADHD would feel less willing to consider medication or another form of treatment for their child.

The extant research cites other factors in addition to child age, parent experience, and parent knowledge of ADHD that seem to influence parent's perceptions of ADHD treatments. Brinkman and colleagues (2008) conducted a study focusing on the angst parents experience about the decision to use a physician-recommended, pharmacological treatment for ADHD. When considering the decision to use a psychotropic drug, many parents expressed stress they felt concerning their child's struggles at school and stated they felt external pressure from school personnel to take action. Other parents cited a concern about stigma as a barrier to treating their child (2008). Williams and Polaha (2014) had similar findings, stating that stigma of mental illness and service seeking is often a barrier especially for those in rural communities. Furthermore, parents expressed concerns about drug addiction and side effects of the ADHD medication (Nafees et. al, 2014). When parents do decide to treat with medication, treatment adherence is typically low (Coletti et. al, 2012).

Current Study

Current research indicates that ADHD misdiagnosis is not only possible but probable, as ADHD symptomology can be misunderstood by parents and professionals alike (Bastra et. al, 2012). As the primary referral source to physicians, parents play a critical role in the diagnosis of ADHD for school age children. Although some research surrounds parent knowledge and

perceptions of ADHD, the role of the parent has received significantly less attention than that of the teacher. This study seeks to extend the ADHD research by examining the knowledge base, experience, and preferences Appalachian parents have regarding ADHD and a range of treatments for the disorder. Specifically, the investigator surveyed Appalachian parents in one rural, eastern Ohio school district to obtain answers to four research questions: 1) What percentage of parents reported some acquired experience or training with ADHD? 2) Do parents of children diagnosed with ADHD favor different treatment options than parents of undiagnosed children? 3) What factors influence parent accuracy in identifying ADHD symptoms? 4) What factors influence parent ability to recognize ADHD in a child described in a vignette?

CHAPTER 2

METHOD

Participants

Paper copies of the surveys were available for all parents or guardians during after school athletic events (i.e., basketball games) held in two school districts in rural Appalachia in February 2016. In all, 69 surveys were completed and returned. One of the surveys was discarded due to being completed by someone who was not a parent. The school district was located in southeastern Ohio in the Appalachian region. The district population is largely comprised of lower-income families. The average income per capita in 2014 was $19, 580 with 17.8% of the population in poverty.

Of the 68 total surveys, 66 (97.1%) of the participants listed themselves as parents either biological, step, or adoptive. One of the remaining two respondents indicated guardian status, whereas the other did not disclose relationship status. Participant ages ranged from 23 years to 68 years although the highest percentage of parents (41.8%) were between 36 and 45 years of age (see Appendix C). Consequently, the mean age of participants was 43.4 years of age.

Females comprised 85.1% (58) of the participants and male 14.7% (10) of participants. Fifty percent (34) of respondents reported having two children. Another 27.9% 1(9), 10.3% (7), and 7.4% (5) of parents indicated they have three, one, and four children, respectively. Two parents reported having five children. The majority of all respondents, 79.4% (54), report having no children with a diagnosis of ADHD. Conversely, 17.6% (13) indicated they have a least one child with an ADHD diagnosis.

The survey asked participants to report highest level of education completed. Of the participants, one respondent did not complete high school or obtain a general educational development (GED), while the majority (50.0 %) completed high school/ GED or participated in some type of postsecondary education (30.9%). Another ten percent of respondents (7) self-reported earning a bachelor's degree while 4.4% (3) and 2.9% (2) reported receiving master's and doctoral degrees. The survey asked participants to list any training received in the identification of ADHD. Of those, 72.1% of participants (49) listed no ADHD training and 28.1% (19) listed having received some kind of training (see Appendix C).

Materials

The survey instrument included five demographic questions including sex, age, number of children, education level, and parental status (see Appendix B). Three additional questions probed a participants' experience with children with ADHD and specific training related to the disorder. Another survey item outlined common ADHD treatments, as well as a no treatment and combination of treatments option for participants to specify their preference(s).

A checklist of symptoms was given for parents to mark the symptoms they believe are representative of ADHD. The checklist included symptoms of ADHD as well as other disorders such as ODD, anxiety disorders, specific learning disabilities, and autism. The final portion of the survey included three vignettes. The parents were asked to read each vignette and determine if they believe the child has ADHD or not. An example of a vignette to be used is taken from the study in Hartnett, Nelson & Rinn (2004):

> "Sam is a 7-year-old second grader. He has a high activity level and appears more restless than other children his age. Sam has difficulty restraining his desire to talk in the classroom and interrupts the teacher often. The teacher repeatedly tried to change Sam's

behavior but Sam questions authority and has a difficult time accepting rules and regulations. Sam's homework is frequently messy because he appears careless and inattentive to details. Sam has poor attention span, especially when he is bored. Sam does not seem to have difficulties at home"

Procedure

The investigator provided the survey to parents and guardians with an introduction letter explaining that by completing the survey they were giving consent for the anonymous data to be used. Parents filled out the survey on location and returned it to a submission box. The data received by the researcher contained no identifying information to protect the confidentiality of all respondents. Although the symptoms were analyzed separately, the symptoms checklist was scored by subtracting the number of incorrect symptoms marked from the total number of symptoms listed (17) in order to render a total correct raw score. The number of total vignettes was similarly aggregated scored by counting the number of vignettes answered correctly out of three. Independent variables included the parents' 1) experience with children diagnosed with ADHD; 2) training; 3) education; and 4) sex. Each of these variables were used in the analysis of the treatment methods selected by survey participants, as well as the symptom checklist and vignette total raw scores. The examiner utilized a chi square analysis for results, more specifically, Fisher's exact test which allows for analysis in a 2x2 table. The t-test analysis was used for the symptoms checklist and vignettes.

CHAPTER 3

RESULTS

During the one-month data collection period a total of 69 surveys were completed and returned. Of those surveys one was discarded due to the participant not being a parent. Another four surveys contained missing data including blank vignettes, missing symptoms checklist, and a skipped demographics section.

Research Question 1: What percentage of Appalachian parents reported some acquired experience or training with ADHD?

The majority of participants in this survey (72.1%) reported no ADHD training. The remaining participants (28.1%) listed having received some kind of training (see Appendix B). Parents had several options to specify what type of training they had. This ranged from family physician, mental health provider, educator, internet research, or magazines, etc. Of parents who did report training, eight (11.8%) reported receiving training from educators, five (7.4%) indicated some other form of training not listed, four (5.9%) reported researching ADHD through the internet or books/magazines, one (1.5%) reported training from a family physician, doctor or psychiatrist, and one (1.5%) indicated training received from a psychologist or other mental health provider.

Research Question 2: Do parents of children diagnosed with ADHD favor different treatment options than parents of undiagnosed children?

Results showed more parents preferred a combination of medication and behavior therapy above all other choices provided for the treatment of ADHD in children. Whereas 28 (41.2%) preferred the combination approach, 25 (36.8%) preferred behavior therapy, 16 (25.5%)

participants preferred medication, 11 (16.2%) preferred discipline, seven (10.3%) preferred other treatment but frequently did not specify, and two (2.9%) preferred no treatment.

Next the investigator examined preference for treatment options by status of child with ADHD. Of the 13 parents or guardians who have children with ADHD diagnoses, six (46.2%) perceived discipline as the best treatment methodology. This percentage (46.2%) was significantly higher than the group of parents with non-identified children (χ^2= 10.393, df=1, p <.01). Only 9.3% of parents who report children without an ADHD diagnosis preferred discipline as the best treatment for the disorder. Further results showed that parents were slightly more likely to recommend medication as an ADHD treatment when they did have a diagnosed child. Of the parents who do not have children diagnosed with ADHD, 17 (31.5%) indicated behavior therapy is the best way to treat. Of parents who have kids with ADHD diagnosis seven (53.8%) indicated behavior therapy is the best treatment. While parents who had children with ADHD were more likely to indicate behavior therapy is the best treatment, the difference was not statistically significant. No disparities were found in the percentage of parents selecting the combination approach to treatment both parents with and without a child with an ADHD diagnosis recommended a combination treatment approach. As outlined in Table 1, commensurate results were also found among parents who reported no or other treatments are best.

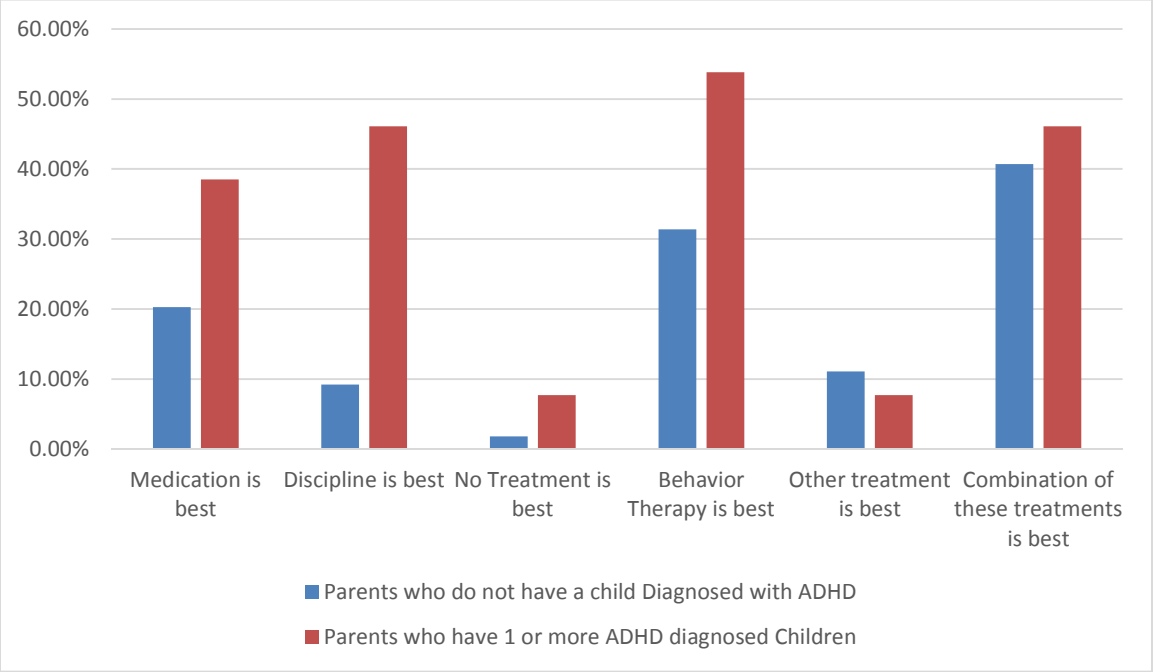

Figure 1. Parent Perceptions on ADHD Treatment. This figure illustrates parents' preferred ADHD treatment methods.

The analysis compared education level and perceptions on each treatment as well. Data showed that twice as many participants with only a high school education (37%) recommended medication as the best ADHD treatment compared to only (15%) of those with some form of postsecondary education although the effect was not statistically significant. Otherwise, education seemed to have little to no impact on perceptions of other treatment methodologies as shown in Table 2.

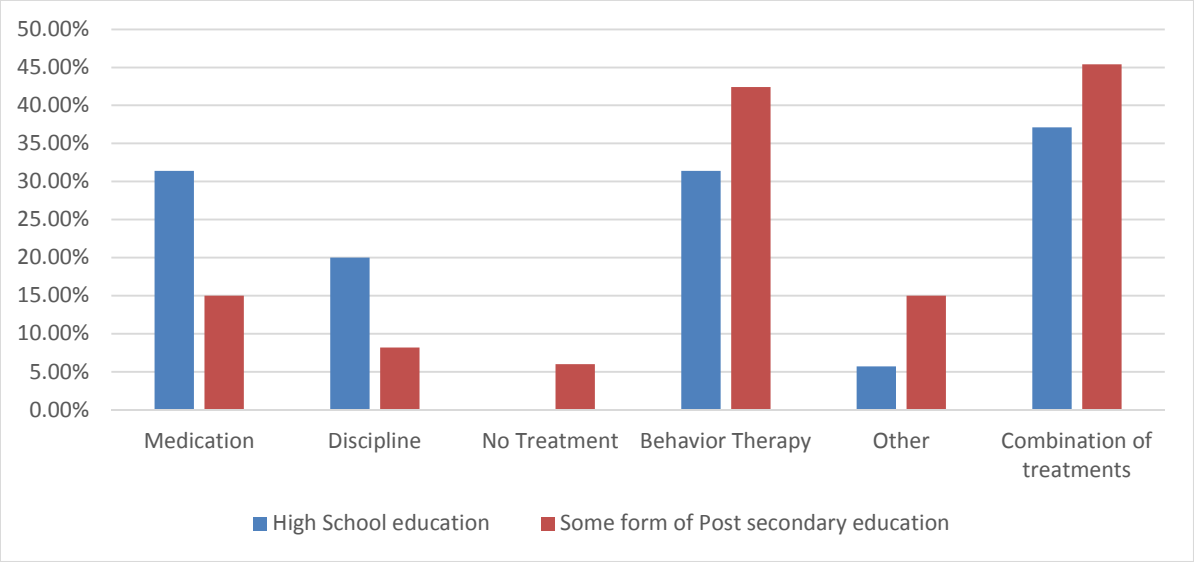

Figure 2. Education Impact on Parent Perceptions of ADHD Treatment. This figure illustrates the impact of education on parent's preferred ADHD treatment methods.

Does the sex of the parent impact preferences for ADHD treatment methods? This question sought to compare the reported sex of parent participants to their perceptions on preferred ADHD treatment methods. Fifty-seven (83.8%) of the participants indicated female, while only 10 (14.7%) indicated male. One participant did not disclose his or her sex. Five males (50%) chose medication as their preferred method of ADHD treatment. In contrast, only 11 (19.3%) females preferred medication as a preferred treatment; however, this result was not statistically significant. Consequently, 22 (38.6%) females preferred behavior therapy as a treatment while only two (20%) males preferred the same. Female and male parents showed similar preferences for discipline, no treatment, other treatment, and a combination of treatments as shown on Table 3.

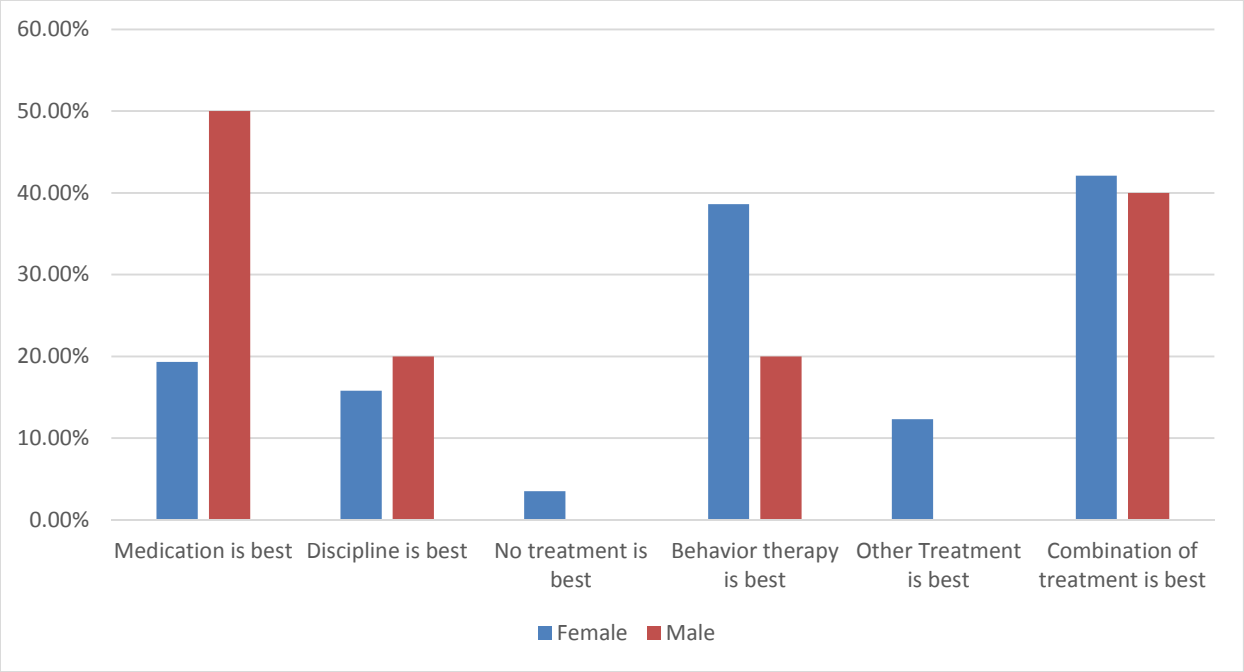

Figure 3. Gender Impact on Parent Perceptions of ADHD Treatments. This figure illustrates the impact of gender on parent's preferred ADHD treatment methods.

Does ADHD training impact parent perceptions on ADHD treatments? The survey utilized asked parents if they had received any type of training on ADHD. This question analyzes the relationship between the treatment perceptions of parents with no ADHD and parents with some form of training, whether it be self-researched or training from some type of professional. Of the participants with some form of ADHD training, seven (36.8%) often preferred medication as an ADHD treatment although results were not statistically significant. Only nine (18.4%) parents with no training preferred medication as a treatment. The no treatment for ADHD was preferred slightly more by parents with some form of training (5.3%) than those with no training (2%). Table 4 shows training appeared to have little to no impact on perceptions of other treatment methodologies. All other measured categories showed negligible differences.

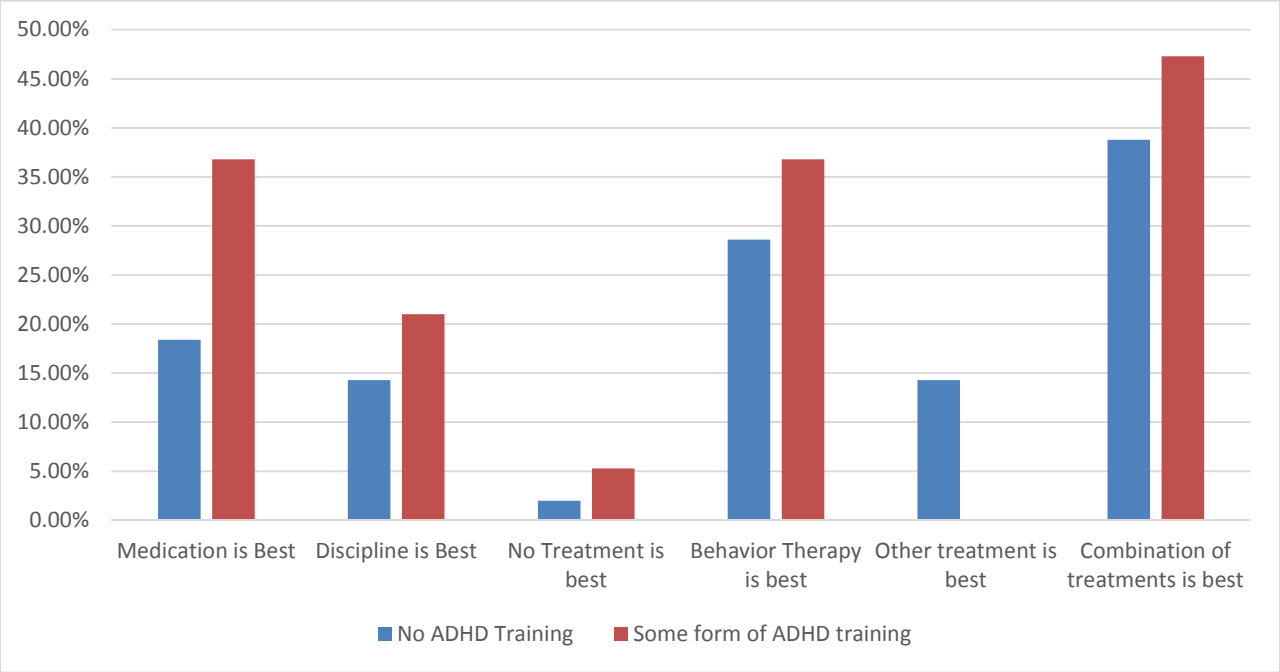

Figure 4. Impact of ADHD training on Parent Perceptions of ADHD Treatment. This figure illustrates the impact of training on parent's preferred ADHD treatment methods.

Research Question 3: What factors influence parent accuracy in identifying ADHD symptoms?

The first focus of this question compares the impact of parents having a child diagnosed with ADHD, sex, education, and training with their perceptions of what the symptoms of ADHD are. Bussing et al.'s (2003) findings revealed less than half of respondents in a nationally representative adult study were able identify correctly the symptoms of ADHD from a vignette. The survey listed 17 symptoms and asked parents to select the symptoms they believe are attributed to ADHD. Of the listed symptoms, only six were recognized ADHD symptoms taken from the DSM-5. The rest of the listed symptoms were representative of disorders such as anxiety, oppositional defiant disorder, specific learning disability, autism, etc. Table 5 shows a breakdown of symptoms parents believed to be characteristic of ADHD.

Table 1

Symptoms perceived to be characteristic of ADHD

	Yes Count (%)	No Count (%)
Attention Deficit Hyperactivity Disorder		
Often fidgets with or taps hands or feet or squirms in seat	57 (83.8)	9 (16.2)
Often does not seem to listen to others when spoken to directly	53 (77.9)	13 (22.1)
Often fails to finish schoolwork, chores, or duties	49 (72.1)	19 (27.9)
Is forgetful in daily activities	32 (47.1)	36 (52.9)
Difficulty waiting his/her turn	52 (76.5)	16 (23.5)
Has trouble focusing on activities or tasks for long periods of time	61 (89.7)	7 (10.3)
Oppositional Defiant Disorder		
Difficulties controlling emotion and behavior	55 (80.9)	11 (19.1)
Often actively defies or refuses requests and rules from those in charge	36 (52.9)	30 (47.1)
Bipolar Disorder		
Has violent outbursts	33 (48.5)	35 (51.5)
Anxiety Disorder		
Excessive worry occurring more days than not about a number of events or activities *(ex. Work or school)*	25 (36.8)	41 (63.2)
Cries often	13 (19.1)	53 (80.9)
Specific Learning Disability		
Has trouble learning or using academic skills	43 (63.2)	25 (36.8)
Avoids activities that require academic skills	24 (35.3)	44 (64.7)
Autism		
Makes little or avoids eye contact when spoken to	27 (39.7)	39 (60.3)
Has rituals or activities that they repeat regularly	22 (32.4)	46 (67.6)
Has trouble communicating with others	34 (50)	34 (50)
Intellectual Disability		
Is immature socially compared to others of the same age	30 (44.1)	38 (55.9)

Most parents were able to recognize the symptoms of ADHD. The following are the symptoms characteristic of ADHD as indicated by the DSM 5: often fidgets or squirms in seat, often does not seem to listen when spoken to directly, often fails to finish schoolwork, chores, or duties, is forgetful in daily activities, difficulty waiting his/her turn, and has trouble focusing on activities or tasks for long periods of time. Parents struggled with the symptom of forgetful in daily activities; less than half attributed this to ADHD. Parents most readily associated the symptoms focused on fidgeting and inability to focus with ADHD. Often, parents confused symptoms of oppositional defiant disorder with ADHD. Particularly, slightly more than half (52.9%) attributed the ODD symptom of often actively defies or refuses requests and rules from those in charge. In contrast, a majority of parents were able to differentiate between symptoms of autism and ADHD (ex. has rituals or activities they repeat regularly).

The examiner conducted a t-test comparing participant training and lack thereof to total number of correct symptomology items marked of 17. Forty-eight of the participants reported having no training on ADHD; when averaged together, participants averaged 10.2 correct items on the symptomology checklist. Those with training (18) averaged a total of 10.9 correct items, therefore there was little difference between the two.

The number of participants with high school/GED level of education (34) was roughly equal to the number of participants who had some form of postsecondary education (32). Those with high school education correctly identified a mean of 10.0 symptoms on the checklist. While those with some form of postsecondary education correctly identified a mean of 10.8 symptoms. While not clinically significant, those with some form of postsecondary education identified close to one more symptom correctly than those with a high school/GED level.

A comparison of the total number of symptoms correct to whether or not participants have a child with an ADHD diagnosis is the focus of this question. On average, those participants without a child diagnosed with ADHD (52) correctly identified a mean of 10.5 symptoms. Participants who had one or more child with ADHD (13) correctly identified a mean of 10.6 symptoms. Therefore, this variable had no significant impact on participant knowledge of ADHD symptoms.

The last focus of this question compared the sex of participants to the total number of correctly identified symptoms. Female participants (55) correctly identified a mean of 10.7 symptoms. In contrast, male participants (10) identified a mean of 9.5 correct symptoms. This result indicates that females had the knowledge to identify an average of one more correct symptom than their male counterparts.

Research Question 4: What factors influence parent ability to recognize ADHD in a child described in a vignette?

The total number of correct vignettes was compared to each variable: education, sex, child with ADHD diagnosis, and training. Each of the three vignettes described a child with different symptoms. After reading each vignette the participant responded with whether or not they believed the described child had ADHD. Only one of the vignettes actually described a child with ADHD. In order to correctly identify all three vignettes, the participant needed to identify the first two children in the vignettes as not having ADHD and identify the final child with ADHD.

This question utilized a t-test, comparing participants with and without a child with ADHD to total number of vignettes correct. Participants who did not have a child diagnosed with

ADHD (53) identified a mean of 1.9 vignettes correctly. Those with one or more children diagnosed with ADHD (13) correctly identified mean of 1.8 of the vignettes. Therefore, having a child with an ADHD diagnosis does not significant impact ability to recognize ADHD in the vignettes.

This question sought to identify any existing impact of education level on the total number of correctly completed vignettes. Participants with a high school/GED education (35) completed a mean of 1.8 vignettes correctly. Those with some form of secondary education completed a mean of 2.1 vignettes correctly. This indicates that education level does not significantly impact parent perceptions of what ADHD looks like in a child.

The sex of the participant is compared to the number of correctly completed vignettes in this question. Results show females (56) correctly completed a mean of 1.9 vignettes. Male participants (10) completed a mean of 2.1 vignettes correctly. Results indicate no significant difference between the sex of the participant and number of correctly completed vignettes.

This final comparison focused on the number of correctly completed vignettes to participant training in ADHD. A total of 48 participants reported no training on ADHD or its diagnosis; those participants had a mean of two vignettes correctly identified. Of the 19 participants with some form of ADHD training, a mean of 1.7 vignettes were correctly completed. This suggests that level of training did not impact participant ability to correctly identify the children described in the vignettes.

CHAPTER 4

DISCUSSION

This study was conducted via a paper survey distributed to parents at local school basketball games. The surveys were distributed in a low income district located in southeastern Ohio in the Appalachian region. Parents who had a child diagnosed with ADHD reported a significant preference for discipline as an ADHD treatment compared with those parents who did not have a child with a diagnosis; this finding was clinically significant. While this study had a clinically significant finding, the overall sample was small. Only 13 parents had children with an ADHD diagnosis. Future research should seek to replicate this result to determine if the preference for discipline as a treatment remains disproportionate based on child diagnosis status. Determining what parents perceive as a discipline would also be helpful to identify in future research.

In a study conducted on parent willingness to use ADHD treatments, willingness to use pharmacological ADHD treatment was increased when parents felt knowledgeable on the subject (Bussing et. al, 2012). Bussing and colleagues (2012) found similar results with willingness to use psychosocial ADHD treatments. This suggest that parents who have little to no knowledge or training on ADHD would feel less willing to consider medication or another form of treatment for their child. In contrast, parents in this study with only high school education showed a preference (37%) for medication as a treatment. Those with some form of post-secondary education (15%) had a much lower preference for medication as a treatment. Regional differences could be contributing to the preferences cited here, and future research into the subject could provide more insight.

Research conducted by Hutchinson and colleagues (2001) found that a majority of parents reported knowing very little about ADHD and its symptoms or causes. The majority of parents in this study 72.1% reported no training on ADHD and its symptoms. Parents who had little to no formal training in ADHD held beliefs that ADHD was caused by substance abuse, low effort, and inadequate parenting (Bussing et. al., 2003). Future research should seek to explore Appalachian parent beliefs on the causes of ADHD. In addition, identifying prevalence of parents who little to no knowledge or education on ADHD and symptoms is important. If these parents are identified and educated on the subject, they can report to physicians more accurately to aid in diagnosis.

Hartnett, Nelson, and Rinn (2004) stated that it is not uncommon to hear of the misdiagnosis of ADHD, when a child's behaviors have been attributed to erroneously ADHD rather than considering other conditions. Results of this study showed parents could misattribute symptoms of other disorders like ODD, to ADHD. Over fifty percent (52.9%) of parents erroneously attributed the symptom of *often actively defies or refuses requests or rules from those in charge* to ADHD. This study helps identify Appalachian parent propensity to misattribute the symptoms of other disorders to ADHD. Hutchinson and colleagues (2001) discuss how parent observations and information is important in a diagnosis but not very reliable.

This study had several limitations. First, relatively few parents participated in the study. If the study had a larger sample size, more significant relationships may be revealed. A relatively small sample of males (10) participated in the survey compared to females. It is possible that more relationships between the data could have been revealed with more male participants. However, the lack of male participants is not uncommon. For example, Johnston, Hommerson,

and Seipp (2008) conducted a study the solely examined mothers' perceptions regarding the social validity of behavioral and pharmacological treatments for ADHD.

In the current investigation, the research collected data from only two low income school districts. Future research should include other areas in the Appalachian region. Gathering data from higher income districts in the Appalachian region is recommended in addition to other low income areas. Parents in higher income districts may have more education and resources that concern ADHD. Including these higher income parents could yield significant data results. A convenience sample was used for the purpose of this study; a random sample would be more representative of parents in Appalachia. The data were collected at a high school basketball game; as such, parents with insufficient income to pay entrance fees or those without transportation may have been excluded. Parents of children with ADHD who are struggling with behavioral issues may not participate in sports or could have difficulty attending a basketball game.

The number of vignettes used in this study could have had an impact on data. Including several more vignettes may result in more meaningful data and relationships. Future research should seek to present parents with more; in doing this, a better understanding of parent ability to perceive ADHD in a child can be obtained. Type of training parents received was not specified in the data analysis due to the small sample size. With a larger sample size data could be analyzed based on the specific type of training parents received.

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APPENDIX A

MARSHALL UNIVERSITY
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Office of Research Integrity
Institutional Review Board
One John Marshall Drive
Huntington, WV 25755

FWA 00002704

IRB1 #00002205
IRB2 #00003206

January 25, 2016

R. Lanai Jennings, PhD
School Psychology, MUGC

RE: IRBNet ID# 813265-1
At: Marshall University Institutional Review Board #2 (Social/Behavioral)

Dear Dr. Jennings:

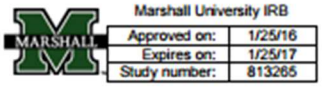
Protocol Title:	[813265-1] Appalachian Parent Perceptions of ADHD Symptomology	
Expiration Date:	January 25, 2017	
Site Location:	MUGC	
Submission Type:	New Project	APPROVED
Review Type:	Exempt Review	

In accordance with 45CFR46.101(b)(2), the above study and informed consent were granted Exempted approval today by the Marshall University Institutional Review Board #2 (Social/Behavioral) Designee for the period of 12 months. The approval will expire January 25, 2017. A continuing review request for this study must be submitted no later than 30 days prior to the expiration date.

This study is for student Shaina Meadows.

If you have any questions, please contact the Marshall University Institutional Review Board #2 (Social/Behavioral) Coordinator Bruce Day, ThD, CIP at 304-696-4303 or day50@marshall.edu. Please include your study title and reference number in all correspondence with this office.

APPENDIX B



Anonymous Survey Consent

You are invited to participate in a research project entitled Appalachian Parent Perceptions of ADHD Symptomology designed to better understand parents' thoughts and knowledge of ADHD and its symptoms. The study is being conducted by Lanai Jennings, PhD and Shaina Meadows, M.A. from Marshall University. This research is being conducted as part of the thesis requirement for Shaina Meadows.

This eleven item survey is comprised of 1) demographics questions, including questions such as age of the participant and education level; 2) a checklist of symptoms of which the participant will be asked to mark the symptoms they believe apply to ADHD; and 3) three short vignettes participants will be asked to read and mark whether or not they believe the child has ADHD. The survey will take 5-15 minutes to complete per participant. Your replies will be anonymous, so do not put your name anywhere on the form. There are no known risks involved with this study. Participation is completely voluntary and there will be no penalty or loss of benefits if you choose to not participate in this research study or to withdraw. Upon completion of the survey you will return it to a submission box. If you choose not to participate you may either return the blank survey to the submission box or you may discard it. You may choose to not answer any question by simply leaving it blank.

Returning a completed survey to the submission box indicates your consent for use of the answers you supply. If you have any questions about the study you may contact Lanai Jennings at (304) 746.2067, Shaina Meadows at (304)-644-8596.

If you have any questions concerning your rights as a research participant you may contact the Marshall University Office of Research Integrity at (304) 696-4303.

By completing this survey and returning it you are also confirming that you are **18** years of age or older.

Please keep this page for your records.

INTRODUCTION**:** My name is Shaina Meadows. I am a school psychology candidate from Marshall University and am researching parental opinions and knowledge of Attention Deficit Hyperactivity Disorder (ADHD) for my thesis. If you agreed to participate in the survey and are a **parent, guardian, or the primary custodial grandparent** of a child, please answer the questions below.

1. **What is your age?**

   _____ years

2. **What is your gender?**
   Please circle

   a. Female
   b. Male

3. **How many children do you have?**

   _____ child(ren)

4. **What is your relationship to your children?**
   Please circle all that apply.

   a. Parent (biological, adoptive, or step)
   b. Guardian
   c. Custodial Grandparent
   d. Foster Parent
   e. Other _____

5. **How many of your children have a diagnosis of ADHD?**

   a. 0
   b. 1
   c. 2
   d. Other: Please specify number _____

6. **How many people or children do you know with a diagnosis of ADHD?**
   Please don't include your own children in this count.

   _____ children and adults

7. **What is the highest level of education you completed?**
   Please circle.

   a. Did not complete high school
   b. High School / GED
   c. Some College
   d. Bachelor's Degree
   e. Master's Degree
   f. Advanced Graduate / PhD

8. **Have you received any of the following training in the identification of ADHD?**
   Please circle all that apply.

   a. No, I've not received training on ADHD.
   b. Yes, I've received training from a family physician, doctor, or psychiatrist
   c. Yes, I've received training from a psychologist or other mental health provider.
   d. Yes, I've received training from educators.
   e. Yes, I've researched ADHD on the internet or through books, magazines, etc.
   f. Yes, Specify Other _____

9. **In your opinion, what do you believe is the best way to treat or manage ADHD?**

____Medication **____Discipline** **_____No treatment**

____Behavior Therapy **____Other:** (*please describe)* _____ *A combination of these approaches.*

10. Please read the symptoms below and mark all symptoms in which you believe are characteristic of Attention Deficit Hyper Activity Disorder (ADHD).

____Often fidgets with or taps hands or feet or squirms in seat

____Makes little or avoids eye contact when spoken to

____Difficulties controlling emotion and behavior

____Excessive worry occurring more days than not about a number of events or activities *(ex. Work or school)*

____Cries often

____Often does not seem to listen to others when spoken to directly

____Often actively defies or refuses requests and rules from those in charge

____Often fails to finish schoolwork, chores, or duties

____Has trouble learning or using academic skills

____Is immature socially compared to others of the same age

____ Is forgetful in daily activities

____ Avoids activities that require academic skills

____Has rituals or activities that they repeat regularly

____Has trouble communicating with others

____Difficulty waiting his/her turn

____Has trouble focusing on activities or tasks for long periods of time

____Has violent outbursts

11. After reading the following descriptions of school age children, please indicate whether not you believe each child has ADHD.

Sam is a 7-year-old second grader. He has a high activity level and appears more restless than other children his age. Sam has difficulty restraining his desire to talk in the classroom and interrupts the teacher often. The teacher repeatedly tried to change Sam's behavior but Sam questions authority and has a difficult time accepting rules and regulations. Sam's homework is frequently messy because he appears careless and inattentive to details. Sam has poor attention span, especially when he is bored. Sam does not seem to have difficulties at home.

Vignette taken from Hartnett, Nelson, & Rinn (2004)

_____ Yes, I believe the child in the description above has ADHD

_____ No, I do not believe the child in the description above has ADHD.

Elizabeth is a 5-year-old kindergartener. Elizabeth has difficulty playing with others and shows a desire to be alone. The teacher has tried to change Elizabeth's behavior and get her to relate to other peers but Elizabeth does not want to talk. It seems that she has little communication skills. Her teacher is also worried about Elizabeth avoiding eye contact when being spoken to. Elizabeth also has a poor attention span, especially when she is bored. Elizabeth seems to do better when she is at home alone with her parents.

_____ Yes, I believe the child in the description above has ADHD

_____ No, I do not believe the child in the description above has ADHD.

Tyler is a 10 year-old fourth grader. Tyler acts up in class and interrupts the teacher often. He has trouble staying in his seat and frequently loses recess time for wandering around the classroom at inappropriate times. Tyler forgets to bring his homework with him to school often. When he does have his homework it is very messy and hard to read. Tyler is having similar problems at home, his father reports that Tyler has issues following rules around the house, and is "constantly on the move". Tyler seems to only be able to concentrate on basketball and video games, which are his favorite ways to pass time.

_____ Yes, I believe the child in the description above has ADHD

_____ No, I do not believe the child in the description above has ADHD.

APPENDIX C

How many children do you have?

	Frequency	Percent	Valid Percent	Cumulative Percent
1	7	10.3	10.4	10.4
2	34	50.0	50.7	61.2
3	19	27.9	28.4	89.6
4	5	7.4	7.5	97.0
5	2	2.9	3.0	100.0

What is your relationship to your children?

	Frequency	Percent	Valid Percent	Cumulative Percent
parent	66	97.1	98.5	98.5
guardian	1	1.5	1.5	100.0

How many people or children do you know with a diagnosis of ADHD?

	Frequency	Percent	Valid Percent	Cumulative Percent
0	5	7.4	7.5	7.5
1	7	10.3	10.4	17.9
2	16	23.5	23.9	41.8
3	5	7.4	7.5	49.3
4	7	10.3	10.4	59.7
5	7	10.3	10.4	70.1
6	2	2.9	3.0	73.1
8	1	1.5	1.5	74.6
10	8	11.8	11.9	86.6
15	1	1.5	1.5	88.1
20	2	2.9	3.0	91.0
25	1	1.5	1.5	92.5
50	1	1.5	1.5	94.0
Don't Know	2	2.9	3.0	97.0
Multiple or Several	2	2.9	3.0	100.0

Age		
	Frequency	Percent
23-35	12	17.6
36-45	28	41.6
46-55	14	20.2
56-68	15	20.6

Sex of Participant				
	Frequency	Percent	Valid Percent	Cumulative Percent
female	57	83.8	85.1	85.1
male	10	14.7	14.9	100.0

How many of your children have a diagnosis of ADHD?				
	Frequency	Percent	Valid Percent	Cumulative Percent
0	54	79.4	80.6	80.6
1	12	17.6	17.9	98.5
2	1	1.5	1.5	100.0
Total	67	98.5	100.0	

What is the highest level of education you completed?				
	Frequency	Percent	Valid Percent	Cumulative Percent
Did not complete high school	1	1.5	1.5	1.5
high school/GED	34	50.0	50.0	51.5
some college	21	30.9	30.9	82.4
bachelor's degree	7	10.3	10.3	92.6
Master's degree	3	4.4	4.4	97.1
Advanced Graduate/PhD	2	2.9	2.9	100.0

Have you received any of the following training in the identification?

	Frequency	Percent	Valid Percent	Cumulative Percent
No I have not received any training in the identification of ADHD	49	72.1	72.1	72.1
Yes, I've received training from a family physician, doctor, or psychiatrist	1	1.5	1.5	73.5
Yes, I've received training from a psychologist or other mental health provider	1	1.5	1.5	75.0
Yes, I've received training from educators	8	11.8	11.8	86.8
Yes, I've researched ADHD on the internet or through books, magazines, etc.	4	5.9	5.9	92.6
Yes, other	5	7.4	7.4	100.0

APPENDIX D

Chi-Square Tests: Having a Child Diagnosed with ADHD compared to Perceptions of Medication as a Treatment

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.886[a]	1	.170		
Continuity Correction[b]	1.023	1	.312		
Likelihood Ratio	1.743	1	.187		
Fisher's Exact Test				.274	.156
Linear-by-Linear Association	1.858	1	.173		
N of Valid Cases	67				

a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 3.10.
b. Computed only for a 2x2 table

Chi-Square Tests: Having a Child Diagnosed with ADHD compared to Perceptions of Discipline as a Treatment

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	10.393[a]	1	.001		
Continuity Correction[b]	7.879	1	.005		
Likelihood Ratio	8.573	1	.003		
Fisher's Exact Test				.005	.005
Linear-by-Linear Association	10.238	1	.001		
N of Valid Cases	67				

a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 2.13.
b. Computed only for a 2x2 table

Chi-Square Tests: Having a Child Diagnosed with ADHD compared to Perceptions of No Treatment for ADHD

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.234[a]	1	.267		
Continuity Correction[b]	.041	1	.839		
Likelihood Ratio	.976	1	.323		
Fisher's Exact Test				.353	.353
Linear-by-Linear Association	1.216	1	.270		
N of Valid Cases	67				

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is .39.
b. Computed only for a 2x2 table

Chi-Square Tests: Having a Child Diagnosed with ADHD compared to Perceptions of Behavior Therapy as a Treatment

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.280[a]	1	.131		
Continuity Correction[b]	1.411	1	.235		
Likelihood Ratio	2.201	1	.138		
Fisher's Exact Test				.197	.118
Linear-by-Linear Association	2.246	1	.134		
N of Valid Cases	67				

a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 4.66.
b. Computed only for a 2x2 table

Chi-Square Tests: Having a Child Diagnosed with ADHD compared to Perceptions of Other Treatment for ADHD

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.131[a]	1	.718		
Continuity Correction[b]	.000	1	1.000		
Likelihood Ratio	.140	1	.708		
Fisher's Exact Test				1.000	.590
Linear-by-Linear Association	.129	1	.720		
N of Valid Cases	67				

a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 1.36.
b. Computed only for a 2x2 table

Chi-Square Tests: Having a Child Diagnosed with ADHD compared to Perceptions of a Combination of Treatments for ADHD

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.126[a]	1	.722		
Continuity Correction[b]	.002	1	.966		
Likelihood Ratio	.125	1	.723		
Fisher's Exact Test				.762	.479
Linear-by-Linear Association	.124	1	.724		
N of Valid Cases	67				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.43.
b. Computed only for a 2x2 table

Chi-Square Tests: Level of Education compared to Perceptions of Medication for ADHD

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.501[a]	1	.114		
Continuity Correction[b]	1.678	1	.195		
Likelihood Ratio	2.555	1	.110		
Fisher's Exact Test				.155	.097
Linear-by-Linear Association	2.464	1	.116		
N of Valid Cases	68				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 7.76.
b. Computed only for a 2x2 table

Chi-Square Tests: Level of Education compared to Perceptions of Discipline as a treatment for ADHD

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.778[a]	1	.378		
Continuity Correction[b]	.305	1	.581		
Likelihood Ratio	.787	1	.375		
Fisher's Exact Test				.514	.292
Linear-by-Linear Association	.766	1	.381		
N of Valid Cases	68				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.34.
b. Computed only for a 2x2 table

Chi-Square Tests: Level of Education compared to Perceptions of No Treatment for ADHD

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.185[a]	1	.139		
Continuity Correction[b]	.578	1	.447		
Likelihood Ratio	2.956	1	.086		
Fisher's Exact Test				.232	.232
Linear-by-Linear Association	2.153	1	.142		
N of Valid Cases	68				

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is .97.
b. Computed only for a 2x2 table

Chi-Square Tests: Level of Education compared to Perceptions of Behavior Therapy for ADHD

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.883[a]	1	.347		
Continuity Correction[b]	.474	1	.491		
Likelihood Ratio	.885	1	.347		
Fisher's Exact Test				.452	.246
Linear-by-Linear Association	.870	1	.351		
N of Valid Cases	68				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 12.13.
b. Computed only for a 2x2 table

Chi-Square Tests: Level of Education compared to Perceptions of Other Treatment for ADHD

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.638[a]	1	.201		
Continuity Correction[b]	.776	1	.378		
Likelihood Ratio	1.680	1	.195		
Fisher's Exact Test				.252	.190
Linear-by-Linear Association	1.614	1	.204		
N of Valid Cases	68				

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 3.40.
b. Computed only for a 2x2 table

Chi-Square Tests: Level of Education compared to Perceptions of Combinations of Treatment for ADHD

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.484[a]	1	.486		
Continuity Correction[b]	.202	1	.653		
Likelihood Ratio	.485	1	.486		
Fisher's Exact Test				.623	.327
Linear-by-Linear Association	.477	1	.490		
N of Valid Cases	68				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 13.59.
b. Computed only for a 2x2 table

Chi-Square Tests: Sex of Parent compared to Perceptions of Medication for ADHD

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	4.411[a]	1	.036		
Continuity Correction[b]	2.884	1	.089		
Likelihood Ratio	3.878	1	.049		
Fisher's Exact Test				.050	.050
Linear-by-Linear Association	4.346	1	.037		
N of Valid Cases	67				

a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 2.39.
b. Computed only for a 2x2 table

Chi-Square Tests: Sex of Parent compared to Perceptions of Discipline for ADHD

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.110[a]	1	.740		
Continuity Correction[b]	.000	1	1.000		
Likelihood Ratio	.105	1	.746		
Fisher's Exact Test				.664	.520
Linear-by-Linear Association	.108	1	.742		
N of Valid Cases	67				

a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 1.64.
b. Computed only for a 2x2 table

Chi-Square Tests: Sex of Parent compared to Perceptions of No Treatment for ADHD

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.362[a]	1	.548		
Continuity Correction[b]	.000	1	1.000		
Likelihood Ratio	.657	1	.418		
Fisher's Exact Test				1.000	.722
Linear-by-Linear Association	.356	1	.551		
N of Valid Cases	67				

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is .30.
b. Computed only for a 2x2 table

Chi-Square Tests: Sex of Parent compared to Perceptions of Behavior Therapy for ADHD

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.280[a]	1	.258		
Continuity Correction[b]	.599	1	.439		
Likelihood Ratio	1.383	1	.240		
Fisher's Exact Test				.311	.224
Linear-by-Linear Association	1.261	1	.262		
N of Valid Cases	67				

a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 3.58.
b. Computed only for a 2x2 table

Chi-Square Tests: Sex of Parent compared to Perceptions of Other Treatment for ADHD

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.371[a]	1	.242		
Continuity Correction[b]	.373	1	.541		
Likelihood Ratio	2.402	1	.121		
Fisher's Exact Test				.583	.304
Linear-by-Linear Association	1.351	1	.245		
N of Valid Cases	67				

a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 1.04.
b. Computed only for a 2x2 table

Chi-Square Tests: Sex of Parent compared to Perceptions of Combination of Treatments for ADHD

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.016[a]	1	.901		
Continuity Correction[b]	.000	1	1.000		
Likelihood Ratio	.016	1	.901		
Fisher's Exact Test				1.000	.593
Linear-by-Linear Association	.015	1	.902		
N of Valid Cases	67				

a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 4.18.
b. Computed only for a 2x2 table

Chi-Square Tests: Amount of Training on ADHD compared to Perceptions of Medication for ADHD

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.597[a]	1	.107		
Continuity Correction[b]	1.672	1	.196		
Likelihood Ratio	2.455	1	.117		
Fisher's Exact Test				.123	.100
Linear-by-Linear Association	2.559	1	.110		
N of Valid Cases	68				

a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 4.47.
b. Computed only for a 2x2 table

Chi-Square Tests: Amount of Training on ADHD compared to Perceptions of Discipline as Treatment for ADHD

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.462[a]	1	.497		
Continuity Correction[b]	.098	1	.754		
Likelihood Ratio	.443	1	.506		
Fisher's Exact Test				.486	.365
Linear-by-Linear Association	.456	1	.500		
N of Valid Cases	68				

a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 3.07.
b. Computed only for a 2x2 table

Chi-Square Tests: Amount of Training on ADHD compared to Perceptions of No Treatment for ADHD

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.498[a]	1	.480		
Continuity Correction[b]	.000	1	1.000		
Likelihood Ratio	.448	1	.503		
Fisher's Exact Test				.484	.484
Linear-by-Linear Association	.491	1	.484		
N of Valid Cases	68				

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is .56.
b. Computed only for a 2x2 table

Chi-Square Tests: Amount of Training on ADHD compared to Perceptions of Behavior Therapy for ADHD

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	5.064[a]	1	.024		
Continuity Correction[b]	3.881	1	.049		
Likelihood Ratio	4.952	1	.026		
Fisher's Exact Test				.048	.025
Linear-by-Linear Association	4.989	1	.026		
N of Valid Cases	68				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.99.
b. Computed only for a 2x2 table

Chi-Square Tests: Amount of Training on ADHD compared to Perceptions of Other Treatments for ADHD

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	3.026[a]	1	.082		
Continuity Correction[b]	1.676	1	.195		
Likelihood Ratio	4.892	1	.027		
Fisher's Exact Test				.178	.089
Linear-by-Linear Association	2.981	1	.084		
N of Valid Cases	68				

a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 1.96.
b. Computed only for a 2x2 table

Chi-Square Tests: Amount of Training on ADHD compared to Perceptions of Combination of Treatments for ADHD

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.417[a]	1	.518		
Continuity Correction[b]	.138	1	.710		
Likelihood Ratio	.414	1	.520		
Fisher's Exact Test				.588	.353
Linear-by-Linear Association	.411	1	.521		
N of Valid Cases	68				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 7.82.
b. Computed only for a 2x2 table

T-Test: Number of Vignettes Correct compared to having a child diagnosed with ADHD

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Total Vignettes Correct of 3	Equal variances assumed	3.412	.069	.374	64
	Equal variances not assumed			.542	37.172

T-Test: Number of Vignettes Correct compared to having a child diagnosed with ADHD

		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
Total Vin Correct of 3	Equal variances assumed	.710	.07837	.20974
	Equal variances not assumed	.591	.07837	.14456

T-Test: Number of Vignettes Correct compared to having a child diagnosed with ADHD

		t-test for Equality of Means 95% Confidence Interval of the Difference	
		Lower	Upper
Total Vin Correct of 3	Equal variances assumed	-.34062	.49737
	Equal variances not assumed	-.21449	.37124

T-Test: Number of Vignettes Correct compared to Level of Education

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Total Vin Correct of 3	Equal variances assumed	8.111	.006	-1.977	65
	Equal variances not assumed			-2.009	60.546

T-Test: Number of Vignettes Correct compared to Level of Education

		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
Total Vin Correct of 3	Equal variances assumed	.052	-.32232	.16306
	Equal variances not assumed	.049	-.32232	.16044

T-Test: Number of Vignettes Correct compared to Level of Education

		t-test for Equality of Means 95% Confidence Interval of the Difference	
		Lower	Upper
Total Vin Correct of 3	Equal variances assumed	-.64797	.00333
	Equal variances not assumed	-.64318	-.00146

T-Test: Number of Vignettes Correct compared to Sex of Parent

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Total Vin Correct of 3	Equal variances assumed	.179	.674	-.973	64
	Equal variances not assumed			-.902	11.736

T-Test: Number of Vignettes Correct compared to Sex of Parent

		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
Total Vin Correct of 3	Equal variances assumed	.334	-.22500	.23119
	Equal variances not assumed	.385	-.22500	.24955

T-Test: Number of Vignettes Correct compared to Sex of Parent

		t-test for Equality of Means 95% Confidence Interval of the Difference	
		Lower	Upper
Total Vin Correct of 3	Equal variances assumed	-.68686	.23686
	Equal variances not assumed	-.77009	.32009

T-Test: Number of Vignettes Correct compared to Training Level of Parent

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Total Vin Correct of 3	Equal variances assumed	.003	.958	1.437	65
	Equal variances not assumed			1.594	41.851

T-Test: Number of Vignettes Correct compared to Training Level of Parent

		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
Total Vin Correct of 3	Equal variances assumed	.156	.26316	.18317
	Equal variances not assumed	.118	.26316	.16510

T-Test: Number of Vignettes Correct compared to Training Level of Parent

		t-test for Equality of Means 95% Confidence Interval of the Difference	
		Lower	Upper
Total Vin Correct of 3	Equal variances assumed	-.10265	.62897
	Equal variances not assumed	-.07007	.59638

T-test: Total Number of Correctly marked Symptoms compared to Parent training on ADHD

		Levene's Test for Equality of Variances		t-test for Equality of Means
		F	Sig.	t
Symptomology Total Correct Items of 17	Equal variances assumed	4.334	.041	-.896
	Equal variances not assumed			-.780

T-test: Total Number of Correctly marked Symptoms compared to Parent training on ADHD

		t-test for Equality of Means		
		df	Sig. (2-tailed)	Mean Difference
Symptomology Total Correct Items of 17	Equal variances assumed	64	.374	-.65972
	Equal variances not assumed	24.253	.443	-.65972

T-test: Total Number of Correctly marked Symptoms compared to Parent training on ADHD

		t-test for Equality of Means		
		Std. Error Difference	95% Confidence Interval of the Difference	
			Lower	Upper
Symptomology Total Correct Items of 17	Equal variances assumed	.73634	-2.13072	.81128
	Equal variances not assumed	.84547	-2.40373	1.08429

Total Number of Symptoms Correctly Marked compared to Education Level of Parents

		Levene's Test for Equality of Variances		t-test for Equality of Means
		F	Sig.	t
Symptomology Total Correct Items of 17	Equal variances assumed	.477	.492	-1.199
	Equal variances not assumed			-1.203

Total Number of Symptoms Correctly Marked compared to Education Level of Parents

		t-test for Equality of Means		
		df	Sig. (2-tailed)	Mean Difference
Symptomology Total Correct Items of 17	Equal variances assumed	64	.235	-.78309
	Equal variances not assumed	63.890	.233	-.78309

Total Number of Symptoms Correctly Marked compared to Education Level of Parents

		t-test for Equality of Means		
		Std. Error Difference	95% Confidence Interval of the Difference	
			Lower	Upper
Symptomology Total Correct Items of 17	Equal variances assumed	.65298	-2.08756	.52139
	Equal variances not assumed	.65092	-2.08349	.51731

T-test: Total number of Symptoms Correctly Marked compared to Having a child diagnosed with ADHD

		Levene's Test for Equality of Variances		t-test for Equality of Means
		F	Sig.	t
Symptomology Total Correct Items of 17	Equal variances assumed	1.098	.299	-.190
	Equal variances not assumed			-.170

T-test: Total number of Symptoms Correctly Marked compared to Having a child diagnosed with ADHD

		t-test for Equality of Means		
		df	Sig. (2-tailed)	Mean Difference
Symptomology Total Correct Items of 17	Equal variances assumed	63	.850	-.15385
	Equal variances not assumed	16.398	.867	-.15385

T-test: Total number of Symptoms Correctly Marked compared to Having a child diagnosed with ADHD

		t-test for Equality of Means		
		Std. Error Difference	95% Confidence Interval of the Difference	
			Lower	Upper
Symptomology Total Correct Items of 17	Equal variances assumed	.81012	-1.77273	1.46504
	Equal variances not assumed	.90566	-2.06999	1.76229

T-test: Total number of Symptoms Correctly Marked compared to Sex of Parent

		Levene's Test for Equality of Variances		t-test for Equality of Means
		F	Sig.	t
Symptomology Total Correct Items of 17	Equal variances assumed	.826	.367	1.323
	Equal variances not assumed			1.207

T-test: Total number of Symptoms Correctly Marked compared to Sex of Parent

		t-test for Equality of Means		
		df	Sig. (2-tailed)	Mean Difference
Symptomology Total Correct Items of 17	Equal variances assumed	63	.190	1.17273
	Equal variances not assumed	11.658	.251	1.17273

T-test: Total number of Symptoms Correctly Marked compared to Sex of Parent

		t-test for Equality of Means		
		Std. Error Difference	95% Confidence Interval of the Difference	
			Lower	Upper
Symptomology Total Correct Items of 17	Equal variances assumed	.88615	-.59811	2.94357
	Equal variances not assumed	.97141	-.95071	3.29616