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ADHD Presentation to Adolescent Patients and Influence on Understanding, Acceptance and Ownership

Mackenzie Floyd

Westminster Christian School

ABSTRACT

With the prevalence of ADHD in the adolescent age group and a lack of current medical literature regarding this disorder, there was increasing significance to explore the way this diagnosis affected adolescents. Further, it was necessary to explore how the way this diagnosis was presented affected the way adolescents perceived the diagnosis. Researchers had previously established the critical period in which ADHD is most commonly diagnosed, and in a study published in 2016 key symptoms displayed by ADHD patients were identified. Still, a highly significant gap remained in the literature concerning pediatrician presentation methods and patient perception based on the way these methods were utilized. This study seeks to fill that gap through a two-part method study of pediatrician diagnosis discussion methods and patient/parent preferences for those methods. It further analyzes which method promotes acceptance, understanding, and ownership of ADHD and how parental presence affects those aspects of patient perception. It was found that there were major discrepancies between patient, parent, and physician preferences for diagnosis discussion procedures depending on the varying aspects of patient perception (understanding, acceptance, ownership). This study points to the significance of further research to explore how to reduce these discrepancies and promote better physician-patient relationships.

Introduction

Adolescence is a critical period in the development of self-identity. The Encyclopedia of Adolescence states, “A central task of adolescence is to develop a sense of oneself as an autonomous individual” (2011). The period in which adolescents develop presents new identity desires of independence as well as a desire for understanding more about oneself. This newfound need for independence conflicts with the typical parental involvement in a diagnostic consultation. This presents an even deeper conflict when discussing ADHD. As defined by the National Institute of Mental Health, Attention-deficit/hyperactivity disorder (ADHD) is, “a neurodevelopmental disorder characterized by symptoms of inattention, hyperactivity, and/or impulsivity that cause impairment in multiple settings” (2021). According to the Center for Disease Control (CDC), ADHD currently affects 13% of children aged 12-17 who live in the United States (2021). Those with the disorder are typically diagnosed at some point during infancy, childhood, or adolescence, as is categorized by the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (2012). This further characterizes the conflicting situation in which adolescents are involved.

Literature Review

ADHD in Adolescents

Adolescence is a critical period in the diagnostic process of ADHD. Often, the hyperactivity trait, which is the most observable feature of the disorder, wanes in adolescence. Further, "other hallmark symptoms, impulsivity and inattention, may be hard to distinguish from typical adolescent behavior" (2016). It is evident that adolescence is a critical period in the discussion of this disorder, and the approach that a pediatrician utilizes to present an ADHD diagnosis to an adolescent patient is equally significant.

A study performed in 2011 by Wolraich et al., members of a subcommittee on Attention-Deficit/Hyperactivity Disorder from *Pediatrics: The Official Journal of the American Academy of Pediatrics*, describes the diagnostic process that a primary care pediatrician should adhere to in order to accurately diagnose a patient with ADHD. The study argues that ADHD should be diagnosed in adolescents who present symptoms of, "academic or behavioral problems and symptoms of inattention, hyperactivity, or impulsivity." It also signifies the first course of action a pediatrician should pursue in the case that ADHD is identified. Depending on the age of the patient, this recommendation varies. This study seeks to define how a physician should conclude that a patient may have ADHD, and how to treat the disorder, but fails to discuss how the physician should present the information to the patient. The way an ADHD diagnosis is conveyed to the patient significantly impacts their perception of the diagnosis, and the way they understand, accept, and take ownership of said diagnosis.

Two physicians, Amgad Makyrus and Eli Friedman, conducted a study in 2012 exploring the importance of patient diagnosis comprehension at discharge from a teaching hospital in New York City. For four months, patients were asked to recall the medications they were prescribed, the medication's purpose, and their discharge diagnosis. Of those surveyed, only 41.9% were able to correctly state their diagnosis, and 27.9% were able to recount the medications prescribed to them (2012). Based on this study, the majority of the patients did not retain the information given to them by the physicians. The method by which they were presented with the diagnosis and medication information was ineffective in helping them come to a clear understanding of what their personal medical situation was. This study however opens the way for further research as it failed to analyze diagnosis presentation method, a key aspect of conveying a diagnosis. Further, this study focuses on a range of ages, and lacks the necessary control to determine the reasoning behind the lack of information retained by the patients. This gap in the research can be easily attributed to the lack of extensive research regarding patient-physician communication. This research paper seeks to fill that gap by exploring the connection between physician diagnosis presentation method of an ADHD diagnosis and adolescent patient understanding, acceptance, and ownership of that diagnosis.

Pediatric Diagnostic Procedures for ADHD

The standard for care amongst pediatricians for adolescent patients varies depending on physician preferences for diagnostic processes. However, in terms of ADHD, specific guidelines must be followed. As previously mentioned, based on the clinical practice guidelines of ADHD from the American Academy of Pediatrics, the standard diagnostic process that general pediatricians should follow when a patient shows signs of ADHD is as follows. The pediatrician should begin the process by analyzing the patient's, "academic or behavioral problems and symptoms of inattention, hyperactivity, or impulsivity." The physician should rule out any other alternative cause and identify impairment in more than one setting. From there, the physician should also assess the patient for other behavioral/emotional conditions that might coexist with ADHD. Since ADHD is recognized as a chronic condition, the pediatrician should recommend treatment. For adolescents, treatment options range from FDA-approved medication to behavioral therapy, with medication listed as the primary recommendation (2011). The guideline covers the Clinical Practice Guideline for the Diagnosis, Evaluation, and Treatment of Attention-Deficit/Hyperactivity Disorder in Children and Adolescents

and serves as a key component in signifying the correct procedures for diagnosing patients aged 4-18 years with ADHD.

Diagnosis Understanding, Acceptance, and Ownership

The concept of patient acceptance of a diagnosis is highly dependent on the method physicians use to present the diagnosis to the patient. The diagnosis presentation method is chosen according to physician preference, implying a variance according to physician. In 2014, a study involving the impact of conveying a diagnosis utilizing a biopsychosocial approach and patient acceptance was conducted. In this study, adolescents with non-epileptic seizures were examined. Results indicated that, "Being believed was the most elemental factor for coping with the condition. Using a biopsychosocial approach to explain the diagnosis may facilitate identification with the explanatory models, and thus acceptance of the diagnosis" (2014).

Adolescent Patient Preferences

In 2006, Jaycox et al., researchers from the University of California and Arlington, Virginia, analyzed adolescent depression patients and their preferences for primary care regarding depression. According to the results, there was, "a strong tendency for adolescents to prefer active treatment (72%) versus watchful waiting (28%)" (2006). In addition, adolescents who reported experiencing negative attitudes regarding depression treatment generally, and maintained positive attitudes regarding medication, or with current anxiety symptoms, proved more likely to prefer medication. This statistic complies with the general recommendation of FDA-approved medication as the first step for ADHD treatment in adolescent patients. This study, however, fails to recognize how pediatrician presentation of the ADHD diagnosis affects treatment selection. It also neglects the impact of parental variables on treatment types, and therefore creates a gap in the research.

Further, in a study published in 2015, Schatz et al., well-known researchers from varying universities in New England, reviewed patients' and parents' preferences for ADHD treatment options and processes of care. Across the 13 studies analyzed in this process, a majority of them argued in favor of medication, implying that the majority of teenage patients preferred medication as the main form of treatment for the disorder. Generally, patients preferred treatment that prioritized symptom improvement, while minimizing negative outcomes such as side effects. The study states, "Although there was variability across studies regarding the importance of outcomes relative to other treatment characteristics, it does appear that treatment outcome often factored heavily in treatment decisions relative to other attributes" (2015). The paper argues that preferences for treatment of ADHD depend on familial background. While this study acknowledges this aspect of ADHD treatment and that of parental involvement in the treatment process, it neglects to realize the impact of physician presentation on ADHD treatment and patient preferences. It also fails to further this argument by discussing patient perception.

Adolescent Patients and Parental/Guardian Involvement

The role of a parent/guardian in the diagnostic process is exceedingly significant in determining patient perception of said diagnosis. This significance is multiplied in the context of an adolescent patient, an age where reliance upon adult figures is still a prominent aspect of identity. Confidential healthcare for adolescents is essential in maintaining proper perception of medical diagnoses. In a study conducted by Duncan et al., confidentiality with adolescents in a medical setting was analyzed. Parents were surveyed to determine how comfortable they felt with their adolescent speaking to a medical professional in a confidential setting. And while most parents were able to recognize the benefits of a confidential appointment, many were concerned about not being properly informed regarding their child's wellbeing (2011). This indicates that parents were still highly concerned about patient-physician confidentiality in regard to a lack of medical information.

In 2013, Drs. Duncan et al., took the previous study a step further by analyzing the same confidentiality, but with the specific diagnosis of Type 1 Diabetes. The physicians' study attempted to determine the impact of parental figures on adolescent-friendly healthcare for adolescents diagnosed with diabetes. In this instance, for teens with Type 1 diabetes mellitus (T1DM), adult contribution has been proven to contribute to better diabetes control. Based on this information, the study was conducted to explore parental opinions on adolescents meeting with their physician alone. Results indicated that parents were primarily concerned about not being properly informed about medical information (66%). However, a large majority of parents recognized the benefit that adolescent patient-physician confidentiality has on responsibility, maturity, and adult relationships. In the study, 77% of parents agreed that one-on-one consultations help adolescents take responsibility for their health, 64% of parents believed that private appointments acknowledge their child's developing maturity, and 63% of parents are in favor of the opportunity confidentiality provides for practice at developing adult relationships with physicians. The study concluded that "parents are somewhat conflicted about the notion of increasing autonomy for their children in the diabetes setting" (2013). While this study expertly addresses the issue of parental involvement in adolescent-physician relationships for patients with diabetes, there is still an important gap to realize the parental component in diagnosis presentation and address the diagnosis of ADHD.

Gap Analysis

Based on the reviewed findings, it is clear that a gap in the current medical literature exists and must be addressed. Three major aspects to this gap were identified. No studies were found addressing how parental presence affects patients' diagnosis perception and treatment choice. Further, there was little discussion of presentation methods utilized by physicians and no studies were found discussing ADHD specific presentation methods. Current literature also fails to address the parental component to an ADHD diagnosis, and how the presence of a parent/guardian might affect adolescent perception of ADHD. The studies mentioned above include significant information, which has led to the conclusion that a project focused on physician ADHD diagnosis presentation methods and how said methods affect patient perception regarding this diagnosis is essential in educating both physicians and adolescents.

Method

This study explores how ADHD diagnosis presentation method affects adolescent patients' understanding, ownership, and acceptance of the diagnosis. Further, it analyzes how the presence of a parent or guardian during the diagnostic process affects these factors when discussing ADHD. This method aims to discover a possible discrepancy between adolescent patient preferences for ADHD diagnosis discussion and parental presence and the preconceptions held by pediatricians regarding ADHD diagnosis discussion. As previously mentioned in the literature review, ADHD is highly prevalent in the United States and currently affects 13% of adolescents (2021). The gravity of the described situation provides context as to the necessity of the discussed research.

Study Design

To measure the preferences of adolescents, a two-part questionnaire was utilized. The primary survey was sent to pediatricians whose responses informed the questions of the secondary survey, which was administered via email to adolescents and their parents/guardians. This secondary survey utilized the same questions as those listed in the primary survey, but asked participants to select the most effective methods in improving acceptance, ownership, and understanding of ADHD. Figure 1 presents the design as a triangulated study below.

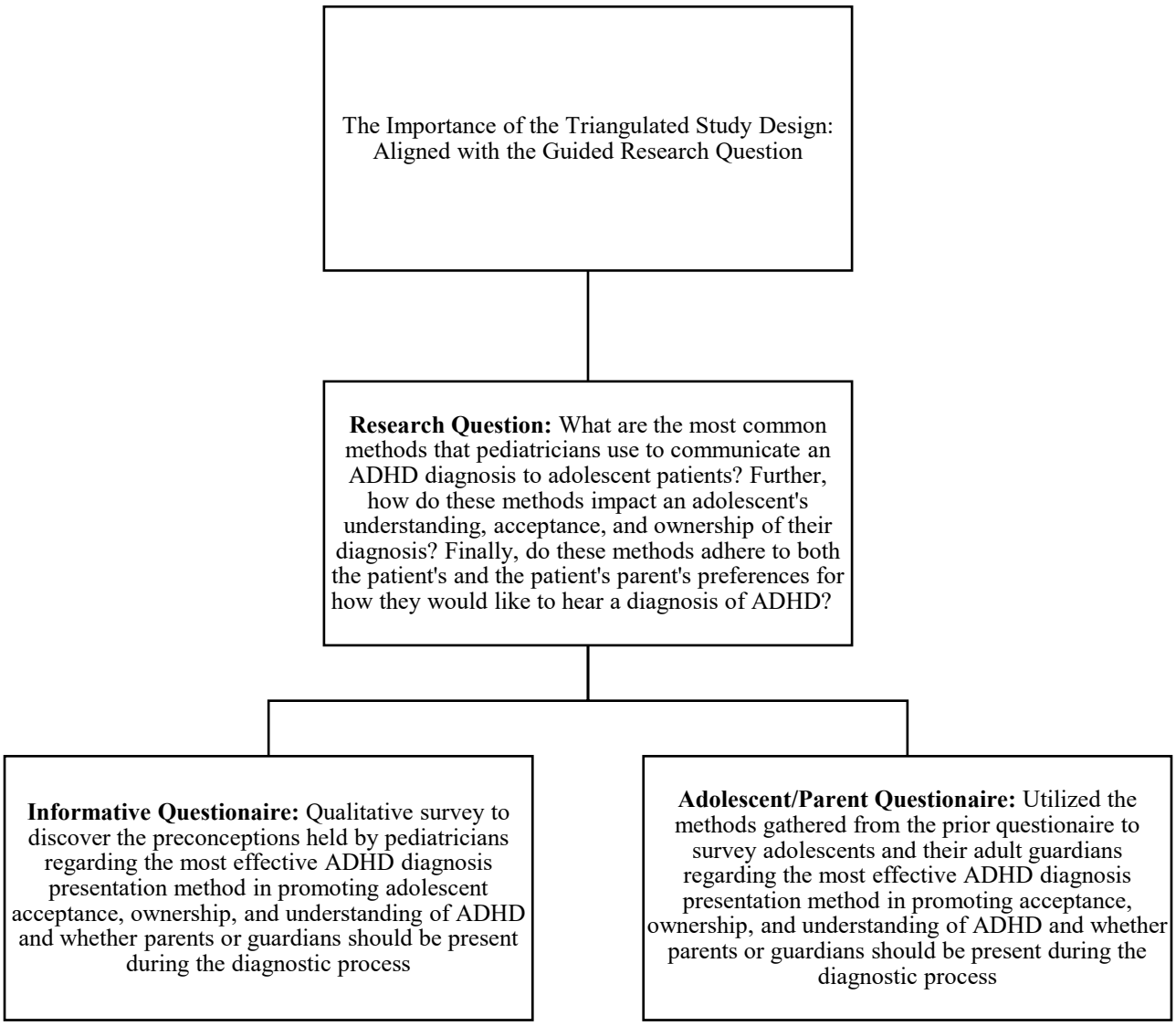

Figure 1. The 2-Part Design Method in Alignment with the Research Question

Participants

Participants in this study ranged from pediatricians to adolescent patients to parents/guardians. Pediatricians' expertise in ADHD diagnostic procedures was used to inform the survey sent to adolescents and their parents/guardians. Pediatrician contact information was obtained via purposive snowball sampling, which is a type of non-probability sampling that is most effective when one needs to study a certain cultural domain with knowledgeable experts within. This method has been proven effective through its use in a 2009 stud1y disclosing the use of Purposive Sampling as a Tool for Informant Selection. An email containing the link to the informative questionnaire was thereby sent out to each pediatrician accordingly. Following responses from the fourteen physicians to the survey, an additional survey was sent to adolescents and parents/guardians in the same county as the pediatricians. This established a controlled location for both the physicians and the adolescents/adults.

Research Instruments

This study was conducted utilizing a two-part survey method, which ensured the credibility of the secondary survey. To further establish credibility, the survey was analyzed by members of the Institutional Review Board (IRB) to guarantee the questions did not violate the policies of the Health Insurance Portability and Accountability Act (HIPAA). The informative survey, initially sent out to pediatricians in Miami-Dade County, included eleven questions regarding ADHD diagnostic presentation methods and their effectiveness on adolescents' understanding, acceptance, and ownership of ADHD. The first question asks pediatricians to list, "any and all methods" they utilize to discuss ADHD with a hypothetical adolescent patient. From there, they were asked to analyze how these methods might affect adolescent patient understanding, acceptance, and ownership of ADHD, and elaborate on each answer. Through administering and collecting, the survey asks pediatrician participants to discuss how parental presence affects these factors and elaborate on each question. The complete informative survey can be found listed under appendix A. The second survey utilizes the presentation methods described by the physicians in the primary survey to ask adolescents which method they think best portrays ADHD in light of promoting acceptance, ownership, and understanding of ADHD in a hypothetical scenario. Because the survey never implies that the participants have been diagnosed with ADHD, but instead presents them with a theoretical scenario, the questions never violate the policies of HIPAA. The law specifies that addressing the diagnostic matters of a patient without written consent is strictly prohibited (1996). The remaining questions of the secondary survey, distributed to adolescents and their guardians, appear identical to those in the primary survey. It is therefore evident that these results might be comparable to those of the primary physician survey, further establishing reliability. For the full secondary survey, please refer to appendix B.

Procedures

Initially, the first survey was distributed to pediatricians utilizing an initial physician contact. From there, the informant then provided additional contacts of pediatricians who lived in the same county, indicating a lack of geographical bias. Because all participant groups were based in the same county, it is justifiable to compare their responses. Those who replied to the primary survey informed the content of the second survey. Here, physicians were asked to list the ways they discuss an ADHD diagnosis with an adolescent patient, and how said methods affected adolescent ownership, acceptance, and understanding of ADHD. Of the fourteen responses, all contained valid information able to be utilized for statistical analysis. Based on the responses of the pediatricians, a secondary survey was distributed to adolescents and their parental guardians in the same county. Further, of the thirty-one responses collected, all were utilized as credible data for statistical analysis.

Delimitations

This study chose to examine participants in the Miami-Dade County region exclusively. The specificity of the county allowed for a controlled sample size and confirmation that patient participants lived in the same region as pediatric participants. Both surveys disclosed the purpose of the study in a preliminary informed consent question. This ensured both minor and adult agreement to participation in the study.

Findings

Results

As a result of specified coding techniques, six key terms were identified as the primary phrases utilized by physicians in the free-response questions. Identification of phrases occurred as a result of common words repeated in each physician's response. The reiteration of common phrasing also implies a shared understanding of proper diagnosis discussion techniques. With 13 of 14 pediatricians utilizing "review tests" as a primary method for diagnosis discussion, results depict a significance of 93 percent. The quantity each repeated phrase was mentioned in a response was tallied and displayed, as is shown in Table 1. Further, each aspect of patient perception resulted in a different presentation method selected by physicians. For instance, the majority of pediatricians concluded that "review tests" would be most beneficial in promoting diagnosis understanding amongst adolescents. However, "discuss interventions" was chosen more frequently as a method of diagnosis presentation that best aids in adolescent ownership of ADHD. This indicates that each aspect of patient perception is equally significant in determining how a patient responds to the discussion of a diagnosis.

Table 1. Physician Free-Response Questions.

Coding:	Review Tests	Discuss Interventions	Narrative Interview	Inform and Destigmatize	Plan for Secondary Consultation	Ask for feedback
List any and all methods you use to present a diagnosis	13	12	5	4	1	1
Which method is most effective in helping adolescents **understand** their diagnosis?	13	2	4	1	0	1
Which method is most effective in helping adolescents **accept** their diagnosis?	4	4	4	3	0	1
Which method is most effective in helping adolescents **take ownership of** their diagnosis?	2	9	3	2	0	0

After coding the qualitative data gathered from the multiple-choice questions discussing the effects of parental presence, it was determined that there was no statistical significance between any of the questions. Questions 1, 2, and 3, which referred to how parents/guardians affected acceptance, ownership, and understanding of ADHD all produced values higher than 0.05, indicating their lack of statistical significance. However, this implies that each aspect is significant in the diagnostic presentation process, and physicians share a common perspective that these factors are equally notable. When asked whether parents/guardians should be present for the diagnostic process and discussion, all fourteen pediatricians answered yes, implying a 100 percent significant response. Table 2 presents the results as described above.

Table 2. Physician Multiple-Choice Questions Related to Parent Presence.

Coding:	Yes	No
Do you think the presence of a parent/guardian affects adolescent **understanding** of an ADHD diagnosis?	12	2
Do you think the presence of a parent/guardian affects adolescent **acceptance** of an ADHD diagnosis?	13	1
Do you think the presence of a parent/guardian affects adolescent **ownership** of an ADHD diagnosis?	10	4
Do you believe a parent/guardian should be present when presenting an ADHD diagnosis to an adolescent patient?	14	0

After the secondary survey was distributed to participants, qualitative data from free response questions was collected and coded. Adolescents were asked to select from the previously coded terms to further compare results to those of physicians. The data can be accurately portrayed in Table 3.

Table 3*:* Patient Free-Response Questions.

Coding:	Review Tests	Discuss Interventions	Narrative Interview	Inform and Destigmatize	Plan for Secondary Consultation	Ask for feedback
Which method do you believe to be most effective in helping you **understand** your diagnosis when being diagnosed with ADHD?	14	6	31	8	3	8
Which method do you believe to be most effective in helping you **accept** your diagnosis when being diagnosed with ADHD?	14	5	25	12	5	5
Which method do you believe to be most effective in helping you **take ownership of** your diagnosis when being diagnosed with ADHD?	19	10	5	9	8	8

To further establish a relationship between the varying participants, patients were asked to answer the same yes/no questions as physicians. Their responses were then enumerated and are disclosed in Table 4.

Table 4*:* Patient Multiple-Choice Questions Related to Parent Prescence.

Coding:	Yes	No
Do you think the presence of a parent/guardian positively affects your **understanding** of an ADHD diagnosis?	23	8
Do you think the presence of a parent/guardian positively affects your **acceptance** of an ADHD diagnosis?	26	5
Do you think the presence of a parent/guardian positively affects your **ownership** of an ADHD diagnosis?	26	8
Do you believe your parent/guardian should be present when your physician presenting an ADHD diagnosis to you?	28	3

To test whether there was a difference in responses based on each aspect of adolescent patient perception, three paired t-tests were conducted. Statistical significance was measured through a comparison of t-test results. Statistically significant data with a p-value less than 0.05 was found when patients' multiple-choice responses were compared. Analysis indicated there was a statistically significant difference in the way patients perceived their parents' effect on understanding and acceptance of ADHD. The value of 0.04 suggests that there is a large difference in whether adolescents believed their parents positively impacted their understanding versus acceptance of ADHD. Another paired t-test was then conducted to analyze the differences between yes/no responses regarding acceptance and ownership. This t-test showed a statistically significant value of 0.04, further signifying the differences in each aspect of patient perception of the ADHD diagnosis. In a similar manner, parental guardians were asked to respond to the same questions adolescents did. Their responses are depicted in Table 5 and Table 6 below.

Table 5*:* Parent Free-Response Questions.

Coding:	Review Tests	Discuss Interventions	Narrative Interview	Inform and Destigmatize	Plan for Secondary Consultation	Ask for feedback
Which method do you believe to be most effective in helping adolescents **understand** their diagnosis when being diagnosed with ADHD?	13	9	25	15	8	4
Which method do you believe to be most effective in helping adolescents **accept** their diagnosis when being diagnosed with ADHD?	17	12	3	13	8	4
Which method do you believe to be most effective in helping adolescents **take ownership of** their diagnosis when being diagnosed with ADHD?	9	30	5	12	11	6

Table 6*:* Parent Multiple-Choice Questions Related to Parent Presence.

Coding:	Yes	No
Do you think the presence of a parent/guardian positively affects adolescent **understanding** of an ADHD diagnosis?	31	2
Do you think the presence of a parent/guardian positively affects adolescent **acceptance** of an ADHD diagnosis?	27	4
Do you think the presence of a parent/guardian positively affects adolescent **ownership** of an ADHD diagnosis?	30	1
Do you believe a parent/guardian should be present when presenting an ADHD diagnosis to an adolescent patient?	29	2

Additional statistical analysis was conducted in order to determine whether statistically significant differences existed between the different aspects of patient perception. While there were no significant differences between understanding and acceptance preferences, there were statistically significant differences between acceptance and ownership preferences. The paired t-test resulted in a p-value of 0.04, suggesting that the responses were different enough to produce significant data. However, no statistical significance was found between understanding and acceptance preferences.

Discrepancy Analysis

After data analysis was conducted, significant discrepancies between pediatricians', adolescents', and patients' preferences for diagnosis presentation method preferences were identified. Each aspect of patient perception resulted in a different discrepancy between participant groups. For understanding, the discrepancy was recorded between physicians' preferences and adolescents'/parents' preferences. The majority of physicians (93%) concluded that reviewing tests with their patients would best promote adolescent understanding of ADHD. However, a significant majority of parents (81%) and a complete majority of patients (100%) concluded that a narrative interview would best promote understanding of the ADHD diagnosis. In discussion of patient acceptance, the inconsistency was most prevalent between physicians'/patients' selected diagnostic measure and that of parents. This aspect of patient perception resulted in the majority (80%) of physicians and the majority (81%) of patients concluding that a narrative interview would best aid in patient acceptance of an ADHD diagnosis. However, the majority (61%) of parents stated that "inform and destigmatize" would best promote feelings of acceptance within an adolescent patient. The final aspect of patient perception analyzed was diagnosis ownership. A major discrepancy occurred between physicians/parents and patients, indicating that physicians only catered to parental preferences and not those of patients. The majority (75%) of physicians and the majority (97%) of parents agreed that discussing interventions with patients would be most effective in improving their ownership of the diagnosis. However, the majority of patients (61%) concluded that reviewing tests would best promote ownership of an ADHD diagnosis. Further, all three participant groups were asked to analyze the effects of parental presence. The majority of all three groups concluded that parents should be present for diagnosis discussion, as they provide essential support for the underage patients.

Discussion

The study was designed to examine how pediatricians' diagnosis presentation methods affect adolescent patients' understanding, acceptance, and ownership of this diagnosis. Further, it analyzes the effects a parent/guardian's presence has on this understanding, acceptance, and ownership.

Limitations

The findings were found to be limited in various ways. As previously stated, the primary survey, which was distributed to pediatricians in Miami-Dade County, received a total of fourteen responses. This sample size limits the application of this study as a standard for all pediatricians. While it is sufficient to determine the preconceptions of pediatricians in the county, it cannot be applied to pediatricians on a larger scale. Furthermore, this study was limited to Miami-Dade County. The culture of this location could potentially impact responses as participants tended to respond in a similar manner. Additionally, the use of non peer-reviewed surveys as a method to acquire data from respondents also produces limitations. Surveys are subject to respondent bias, as certain members of the population may have prior knowledge on the subject of ADHD or may have responded incorrectly due to a lack of understanding. Further, surveys may persuade participants to respond according to researcher standards, rather than their own preferences. In addition, due to the lack of peer reviewed surveys on the topic of ADHD perception based on pediatrician presentation, a non-peer reviewed survey was developed in order to best respond to the research questions. While this survey did limit the ability of the data's application, it allowed for insight into the discrepancies between participant groups.

Implications

However, despite the impact of these limitations, this study is essential in further informing the medical community. The data portrayed throughout the study provides critical implications for pediatricians on a large scale. The research indicates there is a significant discrepancy between physicians and their patients . This issue is one that requires immediate addressing, and the research provided above signifies that pediatricians should reform the presentation methods they abide by. Current standards for diagnosis presentation and evaluation of ADHD in adolescents could be revised in order to fit patient preferences. This would also allow for future physician adaptation to updated patient-centered consultations.

Areas For Future Research

In order to further expand this research, it would be advisable to survey pediatricians, adolescent patients, and parents/guardians at a national level. This increased sample size would likely produce more generalizable data which could be utilized to determine how ADHD should be discussed with adolescents. Additionally, taking an in-depth look into the relationship between pediatricians and their patients in terms of diagnosis discussion and presentation could lead to a deeper understanding of the gap in the literature. Future research may also expand on the role parents/guardians have in the way adolescents perceive other diagnoses relating to mental health disorders. This would allow for deeper analysis of mental health in adolescents, a highly prevalent discussion in the academic community. Further, future researchers might also explore the connections between parents and physicians and how differing relationships might additionally affect patient perception of ADHD or other similar disorders. These concepts offer deeper fulfillment of the current gap in medical literature.

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