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ADHD in Schools: Examining the Role of Gender and Symptom Presentation in Teacher-Initiated Referrals

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Abstract
For years, Attention-Deficit/Hyperactivity Disorder (ADHD) was believed to be a phenomenon disproportionately impacting boys and men. However, in light of recent upticks in initial diagnosis and treatment for girls and women with ADHD, prevalence estimates appear to be more comparable across genders than previously believed. With increased visibility and identification, research has illuminated differential patterns of symptom presentation when comparing males and females with ADHD. Specifically, hyperactive and impulsive symptom patterns are more commonly observed in males, while inattentive symptoms are more characteristic of females with ADHD, though less likely to be identified and perceived to cause less impairment. As initial symptoms often emerge in school, teachers occupy a critical role in both identifying the presence of symptoms and making referrals for students who require specialized services to promote their behavioral, emotional, and academic success. The current study aimed to add to the existing literature by surveying teachers ($N = 50$) to learn more about their perceptions and knowledge of ADHD and to investigate the impact of teacher and student-specific characteristics on educators' perceptions of students' degree of referral need. Findings did not reflect statistically significant differences in participants' perceived degree of student need for specialist referral based on student gender and symptom presentations. A simple linear regression was used to test if student (i.e., gender and ADHD presentation) and teacher characteristics (i.e., years of teaching experience and knowledge of ADHD) predicted differences in perceived referral need and the overall model was not statistically significant. However, teachers with fewer than five years of experience perceived students as demonstrating a lesser degree of referral need than did more experienced teachers. Implications for educators and other stakeholders in school-based mental health are discussed.

Keywords ADHD · Gender · Teachers · School referral

Introduction

For decades, researchers and mental health providers believed Attention-Deficit/Hyperactivity Disorder (ADHD) was a "boys' phenomenon" (Child Mind Institute, 2023). This sentiment was driven by ADHD appearing to be more common in males than females, largely based on the proportions of individuals presenting for both research studies and clinical treatment. Scholars and national mental health organizations have begun to challenge this notion, as more recent prevalence estimates between males and females have consistently declined, suggesting that females have been, and continue to be, more likely to be underdiagnosed than their male peers (Mowlem et al., 2019b) and may actually experience ADHD at more similar rates than previously believed. While significant treatment delays continue to exist across genders from symptom onset to initial diagnosis and intervention (Taylor & Antshel, 2021), gender-based differences in symptom presentation contribute to a widespread tendency for girls to be misdiagnosed and/or diagnosed with ADHD at a later age than boys (Klefsjö et al., 2021; Mowlem et al., 2019a). As symptoms persist and evolve over time, this delay in identification and treatment has longstanding implications for the social emotional, behavioral, academic,

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and occupational outcomes for all individuals with ADHD across the lifespan, particularly those identifying as girls and women (Biederman et al., 1999; Gordon & Hinshaw, 2020; Halkett & Hinshaw, 2020; Hinshaw et al., 2012).

Sex and Gender Based Discrepancies in ADHD Presentation

Researchers and clinicians have continually suggested that symptom differences exist when comparing presentations typical of boys and girls with ADHD, such that girls with ADHD tend to present more frequently with behaviors consistent with inattention and internalizing symptoms (CHADD, 2018; Child Mind Institute, 2023), while boys with ADHD tend to present more frequently with externalizing behaviors characterized by hyperactivity, impulsivity, and disruptive behavior (Abikoff et al., 2002; Gershon, 2002; Newcorn et al., 2001). In addition to discrepancies in outward behavioral presentations, neuropsychological discrepancies have also been documented between girls and boys. For example, girls with ADHD appear to present with greater deficits in perceptual reasoning than their male counterparts, impacting both their ability to access prior knowledge and apply it to novel tasks (Muñoz-Suazo et al., 2019), and their performance on tasks assessing intellectual functioning (Gershon, 2002).

While research has established clear gender-based discrepancies in presentations of ADHD in clinical populations, shortcomings in the diagnostic process have been explored. For example, as symptom severity across genders appears comparable in community samples, data from clinical samples reveal girls oftentimes present with more severe symptomology than their male counterparts (Coles et al., 2012; Mowlem et al., 2019a). These findings suggest that the prevalence rates of girls with ADHD are likely higher than previous estimates, and that many may fail to reach the diagnostic threshold at the same rates as their male peers, despite likeness in impairment. Researchers exploring the impact of gendered social norms on symptom expression posit that girls may have a greater capacity to develop strategies to mask symptoms in environments in which certain behavior is expected of them (Young et al., 2020), such as classrooms in school – which would bolster pre-existing discrepancies in the identification and diagnostic processes. In other words, when compared to their male peers with similar levels of impairment, girls may need to demonstrate more severe symptomology in order to receive a diagnosis of ADHD.

Mayes et al. (2020) posit that language bias may contribute to this discrepancy in diagnosis, noting language utilized in diagnostic criteria is geared towards identifying symptoms of ADHD most commonly observed in males. In the DSM-5, hyperactivity and motor control problems make up the majority of diagnostic criteria for ADHD, making it more difficult for girls with primarily inattentive or internalizing symptoms to be appropriately diagnosed (Loyer Carbonneau et al., 2020). Further, colloquial language differences in how males and females experience emotions and bodily sensations may also vary by gender and bias diagnostic criteria. For example, boys may be more likely to use terminology such as restlessness to describe the same physical sensation that a girl may describe as anxiety (Klefsjö et al., 2021). In general, symptoms of ADHD experienced by girls are likely to instead be interpreted by others as anxiety, depression, or social withdrawal (Quinn, 2005).

ADHD frequently co-occurs with other psychiatric and neurodevelopmental disorders, such as anxiety, depression, learning disorders, oppositional defiant disorder, and conduct disorder (American Psychiatric Association, 2013). Girls experience more overt, externalizing comorbidities such as conduct disorder and oppositional defiant disorder at half the rate of their male peers (Quinn, 2005), and children with ADHD exhibiting predominantly inattentive symptomology are often misdiagnosed and under-identified (Klefsjö et al., 2021). Despite similar levels of social impairment in males and females (Greene et al., 2001), the existence and severity of externalizing symptoms in females specifically is predictive of a clinical diagnosis (Mowlem et al., 2019a). In other words, females have to meet a higher, more narrow threshold in order to be referred, evaluated, and treated for ADHD.

The Role of Teachers in the Recognition of ADHD

Between the ages of five and eighteen, children and adolescents spend most of their daytime hours attending school. Therefore, behavioral and attentional concerns oftentimes come to light when children enter school systems. As such, teachers are in a critical position to identify children exhibiting symptomology and make the majority of referrals for children suspected of having ADHD (Snider et al., 2000). Particularly in schools, externalizing and disruptive behavior drives referrals from teachers. Consequently, students presenting as primarily inattentive are identified and referred for intervention at lesser rates than their peers exhibiting hyperactive symptoms, as they are not as disruptive or difficult to manage in the classroom setting (Gershon, 2002; Klefsjö et al., 2021; Mowlem et al., 2019b).

In a study investigating reasons behind discrepant teacher referral rates based on student gender and presentation, Coles et al. (2012) found that teachers' perception of symptom severity (i.e., general impairment) had a greater influence on referral initiation than did the number of ADHD symptoms exhibited by the student. Given that across genders, symptoms related to hyperactivity were deemed more impairing by teachers than symptoms related

to inattention, it is evident that inattentive symptoms of ADHD are less likely to be both recognized by teachers and addressed through appropriate referral pathways. Because of the influential role educators occupy, factors contributing to teachers' decision-making processes warrant further investigation.

One teacher-specific factor, years of experience, has been examined in regard to its relationship to teacher attitudes about ADHD. Mahar and Chalmers (2007) found that teachers with over seven years of experience were more likely than their less experienced colleagues to endorse feeling comfortable referring students who exhibited symptoms of ADHD for further assessment or intervention, regardless of gender or presentation. Additionally, teachers with fewer than seven years of experience endorsed statements conflating symptoms of ADHD with a lack of student effort and motivation, indicating a lack of knowledge of ADHD and its manifestations in academic environments. Teachers with more years of experience have also been found to perceive ADHD symptoms as less severe than less-experienced teachers, which may lead to reductions in identification and referral rates, even for students who would benefit from intervention (Schultz & Evans, 2012). These findings implicate possible systemic gaps in educator training programs and ongoing professional development curricula focused on the diverse needs of students with emotional and behavioral concerns, while clearly suggesting a need for further research into factors influencing the perception of ADHD symptoms in the classroom.

Teachers' knowledge of ADHD is another factor that has potential to impact the identification of ADHD in schools and subsequently, teacher-initiated referrals. Educators' understanding of the etiology of ADHD, diverse range of presentations, and the evidence-based interventions available are likely to influence the ways in which students' classroom behavior is interpreted and perceived. While knowledge of ADHD has been explored in terms of its relationship to years of teaching experience and use of appropriate classroom management strategies, results have been inconsistent in establishing this connection (Bolinger et al., 2020; Kos et al., 2004), indicating that more experienced teachers do not always possess a greater understanding of ADHD than their less-experienced colleagues.

Coles et al. (2012) found that when asked to indicate intervention preferences, teachers were most likely to report a preference for the use of behavior modification strategies, regardless of student gender or symptom presentation. Interestingly, teachers were more likely to endorse a preference for medication for boys than for girls. These findings highlight the importance of gaining a more nuanced understanding of the impact of both teachers' ADHD knowledge and intervention preferences in clarifying differences in the screening and referral process for all students.

Despite inconsistent results regarding the relationship between years of teaching and knowledge of ADHD, direct experience with students with ADHD in the classroom has been found to be a significant factor correlated with teachers' knowledge of the neurodevelopmental disorder (Bolinger et al., 2020; Kos et al., 2004). While students with ADHD are likely to be present in the majority of classrooms, the type of school setting may also impact the level of exposure teachers receive to these students. For example, students with ADHD are more likely than their peers without ADHD to be placed within a special education classroom at some point during their school-aged years (Barry et al., 2002), implicating ADHD's impact on many executive functioning skills expected of students in order to succeed academically and behaviorally in general education settings (DuPaul et al., 2001). As a result, special education teachers or those working in specialized schools may have more extensive exposure to students with ADHD than teachers working in solely general education settings, supporting their knowledge of the wide range of symptoms, etiology, and prevalence of ADHD.

Implications of the Lack of ADHD Identification and Misdiagnosis

The importance of early intervention services is recognized by educators, clinicians, and mental health experts transdiagnostically, and children with ADHD are no exception. Effective treatment early on is particularly critical for brain development and socialization in children with ADHD (Halperin et al., 2012). Evidence-based interventions such as stimulant medication and psychosocial treatments are commonly utilized to treat children with ADHD and their efficacy has been well-documented. In a randomized control trial, Biederman et al. (2019) found that stimulant medication specifically was correlated with a lower risk for internalizing and externalizing symptoms in both girls and boys with ADHD. Further, findings revealed that stimulants were more effective in treating symptoms of ADHD in younger participants when compared with older participants (Biederman et al., 2019). Delays in the identification and referral processes not only have implications for the effectiveness of available interventions, but also unduly prolongs psychosocial impairment.

When compared with boys, girls are older, attend more evaluation visits prior to receiving an initial ADHD diagnosis, and are more likely to first receive both psychological and pharmacologic treatment targeting emotional concerns before ADHD is properly addressed (Klefsjö et al., 2021). Late or misdirected intervention can lead to the development of, and maintain, social emotional difficulties in children with ADHD, as appropriate and effective treatment is further delayed. Specifically, when left untreated, girls with ADHD

are at a higher risk for experiencing long-term academic and occupational challenges, low self-esteem, suicidality, and nonsuicidal self-injurious behavior, in addition to peer struggles (Biederman et al., 1999; Hinshaw et al., 2012). Taken together, the research base overwhelmingly supports the fact that girls with ADHD and those with predominantly inattentive symptomology are more likely to be identified late or not identified at all, increasing the likelihood for persistent negative academic, social, and emotional outcomes.

Aims of the Present Study

As elementary educators are in a unique position to identify and refer at-risk students for intervention during early development, better understanding the factors contributing to their perceptions of students' needs has implications for critically improving the mental health outcomes of all students. Therefore, the current study aims to expand the existing literature and replicate a United Kingdom (UK) study (Moldavsky et al., 2013) with a U.S. sample by investigating the presence of teacher bias in the identification and referral process of students exhibiting symptoms consistent with ADHD across gender and symptom presentation. This study will extend the previous study by examining how teachers' knowledge of ADHD impacts their perception of students' need for a referral to specialist services. Demographic characteristics of teachers including type of school setting and classroom, grades taught, and additional certifications earned will be collected to further contextualize a heterogeneous, U.S. based educator sample and deepen the field's understanding of why certain students with ADHD receive intervention while others remain both unidentified and untreated. By adding to the existing literature base, this study aims to further the field's understanding of why these discrepancies exist and provide new insights into how they can be effectively targeted. Specifically, the primary aims of the current study are as follows:

1. To describe a national sample of elementary school teachers' knowledge of ADHD and ability to accurately identify students' ADHD and associated challenges in school settings.
2. To identify teachers' views on pre-referral consultation, perceptions of, and factors related to, students' need for a specialist referral, and their views regarding proposed management strategies.
3. To explore the independent effects of student gender and ADHD presentation on teachers' perceived degree of need for specialist referral.
4. To explore how student (i.e., gender and ADHD presentation) and teacher (i.e., knowledge of ADHD and years of experience) characteristics predict levels of perceived need for specialist referral.

We hypothesized that student gender and ADHD presentation would impact teachers' perceptions of ADHD symptoms in the context of a referral. Specifically, we expected that teachers would perceive a greater need for referral for male students with ADHD when compared with female students with ADHD. Additionally, we anticipated teachers would perceive a greater need for referral for students exhibiting both hyperactive and inattentive symptoms than students exhibiting solely inattentive symptoms. Further, we expected male students, combined symptom presentation, greater teacher knowledge of ADHD, and more years of teaching experience to predict greater perception of student need for a referral by teachers.

Methods

Participants

The final sample consisted of fifty educators who were recruited to participate, met inclusion criteria, and completed the required survey questions in full. Eligibility criteria was limited to educators currently teaching or having taught students in grades K-7 within the past year. Participants were overwhelmingly female (94%), with an average age of 37 years old. Half of survey respondents reported having more than 10 years of teaching experience and the majority of respondents worked within a public school (72%), in a suburban setting (80%), and received an additional education-related certification in addition to their initial teaching degree (76%). Respondents reported teaching in general education (40%), special education (26%), and integrated/co-taught classrooms (34%), with 24% of teachers indicating that the type of classroom in which they taught was not best described by the options offered. Participants' teaching experience spanned Kindergarten through 12th grade, and current grades taught spanned Kindergarten through 7th grade. Specific demographic information pertaining to this sample are included in Table 1 below.

Procedures

All procedures were approved by the researchers' Institutional Review Board. Relevant information and the link to participate in the study were distributed to prospective participants through publicly available email listservs for educators in the United States and posted to the researchers' social media accounts including Facebook, Instagram, and LinkedIn in September 2022. Additionally, recruitment information was dispersed to alumni of a school-clinical child psychology doctoral training program in the Northeastern United States, encouraging individuals to share with their professional and social networks if willing. Social media posts were reshared

Table 1 Demographic characteristics of respondents

Variable	*n* (%) or %
Gender	
Female	47 (94%)
Male	3 (6%)
Teaching experience	
< 5 years	8 (16%)
5–10 years	17 (34%)
> 10 years	25 (50%)
School setting	
Public	36 (72%)
Private	11 (22%)
Charter	2 (4%)
Other	1 (2%)
Geographic location	
Urban	10 (20%)
Suburban	40 (80%)
Additional certifications	
Yes	38 (76%)
No	12 (24%)
Type of classroom	
General education	20 (40%)
Special education	13 (26%)
Integrated/Co-taught	17 (34%)
Other	12 (24%)
Grades Currently Teaching*	
Kindergarten	14%
1st grade	18%
2nd grade	22%
3rd grade	32%
4th grade	32%
5th grade	22%
6th grade	10%
7th grade	14%
Other	10%
Grades Taught in the Past*	
Kindergarten	46%
1st grade	44%
2nd grade	48%
3rd grade	50%
4th grade	60%
5th grade	42%
6th grade	24%
7th grade	16%
8th grade	12%
9th grade	8%
10th grade	10%
11th grade	8%
12th grade	10%
Other	12%

Response options not selected by any participants are omitted from this table

*Participants were permitted to select more than one response choice if they wished

and two subsequent reminder emails were sent to all email listservs two weeks apart in October 2022, in an effort to increase the sample size and recruit additional participants.

Recruited participants were asked to complete a survey via the online Qualtrics platform consisting of a demographic questionnaire and several measures. Upon opening the study, participants were presented with the informed consent, which included information regarding the nature of the study and potential risks and benefits of participating. Those who agreed to participate and met inclusion criteria completed a brief survey, lasting approximately 15–20 min.

Participants were first asked a series of demographic questions before receiving one of four vignettes describing a student exhibiting behavior consistent with DSM-5 diagnostic criteria for ADHD. Each participant received one vignette, in an effort to remain consistent with Moldavsky et al. (2013)'s methodology and the vignette presented to each participant wasrandomized based on student gender (i.e., male, female) and ADHD presentation (i.e., predominantly inattentive or combined presentations). After reviewing the vignette, participants were asked to answer five questions related to their conceptualization of the student's behavior, perceived need for referral and beneficial interventions, as well as their understanding of the factors influencing their perception of student need. Response options varied by item and included multiple choice items and one item utilizing a sliding bar to indicate degree of perceived need, with zero indicating the least need and ten indicating the highest degree of student need for a specialist referral. Questions were adapted from Moldavsky et al. (2013), with minor modifications made to the spelling of specific words to reflect conventional North American English. Lastly, participants were asked to answer twenty-five true/false questions related to their understanding of ADHD.

Participants were permitted to skip demographic questions and refuse participation at any time without negative consequences. The informed consent and survey were administered and stored in the Qualtrics online survey platform and only the principal and sub investigator had access to the deidentified survey responses. Upon completion of the survey, participants were offered the option to enter a raffle to be randomly selected to win one of three available $50 gift cards. Interested participants were redirected to an additional survey to record their contact information. All identifying information recorded was available only to the research team and stored separately from their anonymous survey responses.

Measures

Demographics

Demographic information was collected from participants including age, gender, years of teaching experience,

additional educational certifications/specializations, grade(s) currently teaching and past grade(s) taught, type of school in which they were employed at the time of survey completion, and geographical area (rural, urban, or suburban) in which the school was located. No names or other identifying information were collected to protect participant confidentiality.

Student Vignettes

Vignettes were adapted from studies conducted by Groenewald et al. (2009) and Moldavsky et al. (2013) describing a student's classroom behavior based on diagnostic criteria of two types of ADHD, academic history, and impairment across settings (American Psychiatric Association, 2013). Each of the four vignettes depicted a different 9-year-old student – a female with predominantly inattentive symptoms, a female with inattentive and hyperactive symptoms, a male with predominantly inattentive symptoms, and a male with inattentive and hyperactive symptoms. All vignettes are available from the researchers upon request.

Conceptualization of Student Vignettes

The same five questions related to teachers' conceptualization of the student in the vignette were adapted from Moldalvsky et al. (2013) and presented to each participant. Teachers were provided multiple response choices, and asked to select all that applied for the following questions: "In your opinion, does the student exhibit the following?", "Before considering a referral for specialist services, would you consult any of the following?", "Which factors contributed to your decision on the previous question?", and "Considering the vignette, do you believe this child would benefit from any of the following interventions?". One question asked participants to use a sliding bar to answer the question "Please move the marker on the scale according to your perception of this student's degree of need for a specialist referral (i.e., pediatrician, child mental health services, school psychologist, etc.) with 10 being the most in need and 0 being the least." All survey questions are available from the researchers upon request.

Knowledge of ADHD Questionnaire

The Knowledge of ADHD Questionnaire is a 25-item, true/false measure developed by Kos et al. (2004) and adapted by Bolinger et al. (2020) that includes selected items from previously developed, psychometrically sound scales (Jerome et al., 1994; Sciutto et al., 2000), along with additional items. The Knowledge of ADHD Questionnaire assesses teacher knowledge of a variety of aspects of ADHD, including prevalence, cause, presentation, and intervention. Example items include statements such as "ADHD can be inherited" and "all children with ADHD are overactive." Correct responses are summed and contribute to the total knowledge score, with a score of 25 indicating the highest level of knowledge regarding ADHD, and a score of zero indicating the lowest knowledge level. The scale's psychometric properties were not reported by Kos et al. (2004) or Bolinger et al. (2020). However, Youssef et al. (2015) assessed the reliability of the scale developed by Kos et al. (2004), yielding a Cronbach's alpha score of 0.86, indicating the measure's excellent internal consistency. Additionally, the original Knowledge of Attention Deficit Disorders Scale (KADDS) developed by Sciutto et al. (2000) has demonstrated strong psychometric properties. Specifically, the measure has been found to possess excellent internal consistency, ranging from 0.81-0.89 (Perold et al., 2010; Sciutto et al., 2016; and strong content validity (Perold et al., 2010; Sciutto et al., 2004; Soroa et al., 2013), as higher knowledge levels have been found to be associated with increased knowledge and exposure to children with ADHD, ADHD-specific training, and ADHD-specific educational interventions (Ward, 2014).

Data Analysis

Data analyses were performed on a final sample of 50 participant responses after removing approximately 20 responses that did not meet inclusion criteria and/or did not complete initial questions after consenting and removing an additional 10 responses using listwise deletion methods due to missing data on key variables that was determined to be missing at random. Following data collection, de-identified data was downloaded from Qualtrics into Excel and Python, version 3.9.0 (van Rossum, 2020) for analysis. Descriptive statistics, including frequencies, means, and standard deviations were calculated for demographic variables and descriptive sample characteristics in order to answer our first and second research questions. In order to examine the quantitative data regarding our third research question related to teachers' perception of student need, two analyses of variance tests were conducted to investigate how student gender and ADHD presentation independently impacted respondents' perceived degree of student need for a specialist referral. To answer our fourth research question, a linear regression analysis was performed to determine how well student (i.e., gender and ADHD presentation) and teacher characteristics (i.e., knowledge of ADHD and years of teaching experience) predicted respondents' perceived degree of student need for a specialist referral.

Results

Teacher Knowledge of ADHD

In general, female participants ($M = 19.340$, $SD = 1.550$) scored higher on ADHD knowledge than male participants ($M = 17.667$, $SD = 4.933$). Teachers with fewer than five years of experience ($M = 18.875$, $SD = 1.959$) scored lower than those with between five and ten years ($M = 19.294$, $SD = 1.649$) or those with more than ten years of experience ($M = 19.320$, $SD = 1.994$). Overall, participants who indicated working in charter schools correctly answered 80% of knowledge items, outscoring educators working in public or private schools, who correctly answered 76.40% ($SD = 1.879$) and 77.82% ($SD = 2.018$) of knowledge items, respectively (Table 2).

Table 2 Teachers' ADHD knowledge scale score, by demographic characteristics

Variable	*n*	Mean	Standard Deviation
Teacher gender			
Female	47	19.340	1.550
Male	3	17.667	4.933
Teaching experience			
< 5 years	8	18.875	1.959
5–10 years	17	19.294	1.649
> 10 years	25	19.320	1.994
School setting			
Public	36	19.111	1.879
Private	11	19.455	2.018
Charter	2	20.000	0.000
Other	1	20.000	N/A

Data reflect the sum of participants' correct responses on the 25-question T/F scale

Teachers' Perceptions of Students' Needs

Teachers' Ability to Identify ADHD and Associated Challenges

All participants across the vignettes recognized the presence of at least one difficulty experienced by the student described. Attentional difficulties were most likely to be identified across groups, ranging from 91–100%, and teachers were more likely to conceptualize male students across symptom presentations as having learning difficulties when compared to their female counterparts. Table 3 below provides a detailed account of all responses, including the number and percentage of respondents who received each vignette and selected the specified item choice.

While attention difficulties were widely endorsed by respondents across vignettes, the classification of ADHD was less frequently endorsed, despite participants being permitted to select multiple response choices. Overall, ADHD was more often identified in students with combined symptoms than inattentive. Across groups, teachers were most likely to accurately identify ADHD in females presenting with combined symptoms (82%) and least likely to identify ADHD in females presenting with predominantly inattentive symptoms (45%). See Table 4 below for more details.

Teachers' Perceptions of Student Need and Preferences Related to Pre-Referral Consultation

When asked about their perceptions of student need for specialist referral after reading the vignette, teachers perceived female students with combined symptomology ($M = 7.364$, $SD = 2.541$) as the most in need of a specialist referral. Female students with inattentive symptomology ($M = 6.455$, $SD = 1.916$) were perceived by teachers to be the least in need of a specialist referral. Descriptive statistics are provided in additional detail in Table 5 below.

Table 6 provides a detailed account of teachers' perceptions of student need for a specialist referral by

Table 3 Teachers' views of student difficulties, by vignette

Teachers' Views	Inattentive male $n = 14$ (%)	Combined male $n = 14$ (%)	Inattentive female $n = 11$ (%)	Combined female $n = 11$ (%)
Typical behavior for a child	0 (0.00%)	3 (21.43%)	1 (9.00%)	0 (0.00%)
Learning difficulties	5 (35.71%)	6 (42.85%)	3 (27.27%)	3 (27.27%)
Hyperactivity	5 (35.71%)	7 (50.00%)	2 (18.18%)	6 (54.55%)
Emotional difficulties	2 (14.29%)	3 (21.43%)	3 (27.27%)	0 (0.00%)
ADHD	7 (50.00%)	9 (64.29%)	5 (45.45%)	9 (81.82%)
Behavioral difficulties	4 (28.57%)	4 (28.57%)	2 (18.18%)	3 (27.27%)
Attention difficulties	14 (100.00%)	14 (100.00%)	11 (100.00%)	10 (90.91%)

Participants were permitted to select as many factors as they wished

Table 4 Teachers' identification of ADHD, by vignette

Vignette	*n* (%)	Identified ADHD (*n* (%))
Inattentive male	14 (28%)	7 (50%)
Combined male	14 (28%)	9 (64%)
Inattentive female	11 (22%)	5 (45%)
Combined female	11 (22%)	9 (82%)

The terms inattentive male, combined, male, inattentive female, and combined female are used to describe the gender and ADHD presentation presented by the student in the vignette participants received

demographic characteristics. Educators who reported teaching in integrated/co-taught classrooms ($M = 7.529$, $SD = 1.908$), charter schools ($M = 7.500$, $SD = 3.536$), and who reported between five and ten years of experience ($M = 7.588$, $SD = 2.063$) perceived students as most in need of a specialist referral, while teachers who reported fewer than five years of experience ($M = 5.375$, $SD = 1.768$) perceived students as least in need of a referral.

All participants indicated they would consult with at least one individual prior to making a specialist referral. Across the vignettes, teachers were most likely to consult with a school psychologist (94%) or the student's parent (86%). Teachers were more likely to consider speaking with parents for females, in general, and more so for female students with inattentive symptoms compared to female students with combined symptoms. Teachers were more likely to consider consulting with colleagues regarding female students with combined symptoms than female students with inattentive symptoms, while rates of consultation to a school psychologist remained consistent across symptom presentation. Additionally, teachers were more likely to consult a colleague for a male student with combined symptoms than their inattentive gender-matched counterparts. Overall, teachers were more likely to consult a colleague for female students across presentations than their symptom-matched male counterparts. Additional information regarding teachers' consultation preferences are provided in Table 7 below.

Table 5 Teachers' perception of degree of student need, by vignette

Vignette	Mean 0–10	Median	SD	Range
Inattentive male	6.643	7.000	1.737	7
Combined male	6.929	7.500	2.586	7
Inattentive female	6.455	7.000	1.916	7
Combined female	7.364	7.000	2.541	6

Response options ranged from 0–10 on a sliding scale, with 0 being the least in need and 10 being the most in need

Table 6 Perception of student's degree of need for referral (0–10) by teacher demographics

Variable	Mean 0–10	Median	SD	Range
Teacher gender				
Female	6.872	7	2.232	8
Male	6.333	7	1.155	2
Type of school				
Public	6.889	7	2.175	8
Private	6.545	6	2.296	6
Charter	7.500	7.500	3.536	5
Other	7.000	7	N/A	0
Geographic setting				
Urban	6.400	5.500	2.459	6
Suburban	6.950	7	2.124	8
Rural	-	-	-	-
Type of classroom*				
General education	6.750	7	1.773	7
Special education	6.923	7	2.139	7
Integrated/co-taught	7.529	8	1.908	6
Other	6.167	7	2.588	8
Years of experience				
< 5 years	5.375	5	1.768	5
5–10 years	7.588	8	2.063	7
> 10 years	6.800	7	2.198	8
Additional certifications earned				
Yes	7.026	7	2.236	8
No	6.250	7	1.960	7

Response options ranged from 0–10 on a sliding scale and reflect participants' perceptions of the student described in their vignette's need for referral, with 0 being the least in need and 10 being the most

*Participants were permitted to select more than one response choice if they wished

Factors That Contribute to Teachers' Decisions

When asked about the factors influencing their perceptions of degree of referral need, the greatest number of teachers (92%) indicated that the potential impact of difficulties on the child contributed to their perception of student need for a specialist referral, followed by teachers' personal experiences with specialist services (54%). All options endorsed as influencing participants' perception of referral need are included in Table 8 below.

Teachers' Views on Proposed Management

Across the four vignettes, teachers were most likely to consider academic-focused supports in managing student difficulties regardless of students' presentation type.In considering medication as a proposed management strategy, teachers who read the male student with combined symptoms vignette were most likely to propose medication

Table 7 Teachers' pre-referral consultation preferences, by vignette

Preferred Individual to Consult With	Inattentive male $n=14$ (%)	Combined male $n=14$ (%)	Inattentive female $n=11$ (%)	Combined female $n=11$ (%)
Parents	12 (85.71%)	11 (78.57%)	11 (100.00%)	9 (81.82%)
School nurse	1 (7.14%)	2 (14.29%)	3 (27.27%)	2 (18.18%)
Colleague	8 (57.14%)	11 (78.57%)	9 (81.82%)	11 (100.00%)
School psychologist	14 (100.00%)	13 (92.86%)	10 (90.91%)	10 (90.91%)
Not listed	3 (21.43%)	2 (14.29%)	2 (18.18%)	1 (9.09%)

Participants were permitted to select as many choices as they wished

Table 8 Factors influencing perception of student need

Teacher Views	%
Impact of difficulties on the child	92%
Impact of difficulties on the child's peers	20%
Personal views about referrals	24%
Parent views about referrals	20%
Stigma surrounding referrals	6%
Personal experience with specialist services	54%
Minimal awareness of what specialist services offer	4%
Other	12%

Participants were permitted to select as many factors as they wished

for (57%) when compared with other groups. Behavioral interventions were least likely to be considered by teachers for female students with inattentive symptoms (45%) when compared with other groups, and most endorsed by teachers who read the female student with combined symptoms vignette(82%). See Table 9 below for additional details.

Effects of ADHD Presentation and Gender on Perceived Degree of Need for Specialist Referral

Two separate one-way Analysis of Variance (ANOVA) tests were performed to compare the effects of ADHD presentation and gender on teachers' perceived degree of student need for specialist referral. Findings revealed that there were not statistically significant differences in perceived degree of student need across ADHD presentations ($F(1,48)=0.822$, $p=0.369$) or student gender ($F(1, 48)=0.039$, $p=0.845$).

Predictors of Perceived Degree of Students' Need for Specialist Referral

Additionally, a linear regression analysis was performed to determine how well student (i.e., gender and ADHD presentation) and teacher characteristics (i.e., ADHD knowledge and years of experience) predicted teachers' perceived degree of student need for specialist referral. The overall regression model was not statistically significant ($R^2=0.147$, $F(5, 44)=1.518$, $p=0.204$) as ADHD presentation ($\beta=$-0.535, $p=0.392$), student gender ($\beta=$-0.214, $p=0.734$), and ADHD knowledge ($\beta=$-0.127, $p=0.448$) failed to demonstrate a significant predictive relationship with perceived degree of student need. However, years of teaching experience did explain a portion of the variance in teachers' perceived degree of student need. Specifically on the scale ranging from 1–10, teachers with less than five years of experience perceived a lesser degree of need for referral than did more experienced teachers, holding all other variables constant ($\beta=$-2.304, $p=0.016$) (Table 10).

Discussion

The current study aimed to investigate factors influencing teachers' perception of students with ADHD's need for specialist services and hypothesized that teachers would

Table 9 Teachers' views of proposed management, by vignette

Proposed Management	Inattentive male $n=14$ (%)	Combined male $n=14$ (%)	Inattentive female $n=11$ (%)	Combined female $n=11$ (%)
Medication	4 (28.57%)	8 (57.14%)	4 (36.36%)	4 (36.36%)
Additional academic-focused support	13 (92.86%)	12 (85.71%)	11 (100.00%)	10 (90.91%)
Behavioral interventions	11 (78.57%)	10 (71.43%)	5 (45.45%)	9 (81.82%)
Not listed	2 (14.29%)	2 (14.29%)	4 (36.36%)	2 (18.18%)

Participants were permitted to select as many choices as they wished

Table 10 Teacher and student characteristics as predictors of perceived need

Factor	β	*SE*	95% CI *LL*	95% CI *UL*	*p*-value
ADHD Presentation	-0.535	0.619	-1.782	0.712	0.392
Student gender	-0.214	0.625	-1.474	1.046	0.734
Teaching experience					
< 5 years	-2.304	0.915	-4.147	-0.460	0.016**
5–10 years	-	-	-	-	-
> 10 years	-0.741	0.699	-2.150	0.668	0.295
Knowledge of ADHD (sum, 0–25)	-0.127	0.166	-0.462	0.208	0.448

$R^2 = 0.147$, F-statistic = 1.518, $p = 0.204$

**$p < 0.05$

perceive greater need for males and students with symptoms consistent with ADHD combined type (i.e., inattention and hyperactivity/impulsivity). Methodology utilized in the current study was modeled after Moldavsky et al. (2013) and Groenewald et al. (2009), both of which used vignettes to examine the effects of student gender and symptom presentation on teachers' recognition of ADHD and views on management in UK samples. Building on the potential explanatory nature of these variables, the current study also examined how teacher knowledge of ADHD along with other teacher characteristics, predicted the perception of student referral need. This study aimed to address a gap in the extant literature by extending the previous UK-based studies and by using a sample of United States-based elementary school teachers.

Misconceptions regarding the prevalence of ADHD across genders have long plagued the fields of education, school and clinical psychology, falsely labeling ADHD as a "boys' phenomenon" (Child Mind Institute, 2023). Subsequently, males are more likely than females to be identified and referred for ADHD-specific treatment (American Psychiatric Association, 2013; Klefsjö et al., 2021; Mowlem et al., 2019a; National Institute of Mental Health, n.d.). Even when symptom presentation remains constant across genders, teachers have been found more likely to refer boys than girls (Sciutto et al., 2004). Therefore, we hypothesized that teachers would perceive a greater degree of need for a referral for male students than for female students, even when symptom presentation remained constant. While some mean differences emerged between males and females across the vignettes, this hypothesis was not supported by our data, as differences between teachers' perceived degree of need for male and female students were not statistically significant.

Discrepancies in identification and treatment between girls and boys are believed to be largely driven by differences in symptom presentation across genders, such that hyperactivity and impulsivity are more likely to occur in males and inattentive symptoms are more likely to occur in females (Abikoff et al., 2002; CHADD, 2018; Child Mind Institute, 2023; Gershon, 2002; Newcorn et al., 2001). Hyperactivity, impulsivity, and disruptive behaviors tend to be more noticeable and maladaptive and, consequently, are more likely to drive childhood ADHD referrals initiated by both teachers and parents (Gershon, 2002; Klefsjö et al., 2021; Mowlem et al., 2019b). Therefore, we also hypothesized that teachers would perceive a greater degree of need for referral for students presenting with combined symptomology than for students presenting with predominantly inattentive symptoms, even when gender remained constant. While teachers appeared to perceive a slightly lesser degree of need for students with solely inattentive symptoms based on mean scores, these between group differences failed to reach statistically significant levels, and subsequently failed to confirm our hypothesis.

Lastly, we hypothesized that student (i.e., gender and ADHD presentation) and teacher characteristics (i.e., knowledge of ADHD and years of teaching experience) would predict perceived degrees of student need from teachers. Specifically, we hypothesized that higher levels of perceived student need by teachers would be predicted by male students, students with combined symptomology, and experienced teachers who were more knowledgeable about ADHD. Our results revealed that ADHD presentation, student gender, and teachers' ADHD knowledge did not individually or jointly predict statistically significant changes in teachers' perceived degree of student need. Teachers' years of experience explained a portion of the variance regarding the need for a specialist referral, such that less than five years of teaching experience predicted a lesser degree of perceived need, while more than five years of teaching experience failed to predict changes in teachers' views. However, as between-group significance testing was outside the scope of the current study, these results may also have been due to chance. Overall, these findings implicate the instrumental role of teachers' experience in predicting perception of student referral need, despite our initial hypothesis not being supported.

Taken together, our findings are inconsistent with the vast research base suggesting that male students, and students presenting with hyperactive symptoms are more likely to be ultimately referred for ADHD-related targeted intervention. Given a recent uptick in research, clinical, and social media attention, the findings of the current study may reflect an increased awareness of ADHD and the broad range of presentations. However, while perceived degree of need remained somewhat consistent across groups, teachers appeared to accurately identify the presence of ADHD in students with combined symptoms more frequently than in students exhibiting solely inattentive symptoms. In

particular, teachers identified the presence of ADHD in females with inattentive symptoms least out of the four vignettes, and most commonly identified ADHD in females with combined presentations. As degree of need remained relatively stable across groups, these findings suggest that teachers do, in fact, recognize the presence of inattentive symptoms, but may not conceptualize these symptoms as existing within the framework of a neurodevelopmental or psychiatric disorder (Groenewald et al., 2009), and rather consider patterns of difficulties (i.e., hyperactivity, attentional challenges, behavioral challenges, learning difficulties, etc.) as independent of, or subthreshold to, an ADHD classification. Further, gendered social norms may play a role in teachers' perception of these symptoms, such that rule breaking behavior, impulsivity, and hyperactivity are outside the expectation of "socially accepted behavior" for girls. Therefore, they may be more likely to be identified as worrisome, which aligns with research showing externalizing behaviors' proclivity to drive referrals—particularly in females (Mowlem et al., 2019b).

We also investigated the impact of teachers' knowledge of ADHD, hypothesizing that higher knowledge scores would predict greater perceived need. Despite presumptions that lower knowledge scores would result in teachers' failure to identify student impairment (Mulholland et al., 2015), when compared to teachers with higher knowledge scores, our results did not support this hypothesis, signaling the complex nature of both variables. The knowledge scale utilized in the current study assessed for knowledge related to various aspects of ADHD, including etiology, development, presentation, prevalence, and management. Even with the same overall knowledge score, it is plausible that teachers' item-level responses may have reflected varying levels of understanding across unique aspects of ADHD assessed by the measure, subsequently influencing their perception of student need. Further, knowledge scale scores may implicate differences in teachers' attitudes regarding ADHD and therefore, explain differences in perceptions of student need and referrals more broadly. For example, common misconceptions include beliefs that children with ADHD are "lazy" and "can choose to be better behaved" (Mulholland et al., 2015). Commensurate beliefs held by educators undoubtedly impact the likelihood of teachers to initiate referrals, even if knowledge of other aspects of ADHD is intact.

In terms of symptom management, however, across gender and symptom presentations teachers were much more likely to propose academic-focused interventions, rather than medication or behavioral support, deviating from findings reported by Coles et al. (2012), in which behavioral interventions were most favored by teachers. In other words, while teachers perceived students across gender and symptom presentations to possess the same relative level of need, their views regarding which interventions would be appropriate appeared to differ across groups. Behavioral interventions were least likely to be proposed for females with inattentive presentations, and medication was most commonly proposed for males with combined presentations. While research has shown that teachers believe implementing behavioral interventions falls within their roles as educators, managing externalizing behavior problems was rated as the area in which they felt least equipped to handle (Reinke et al., 2011). Our results may mirror these findings, as teachers may feel unprepared to manage externalizing behavior in the classroom, and therefore, feel that pharmacologic interventions may be more effective in reducing these symptoms.

When asked about their pre-referral preferences, consultation with school psychologists was most frequently endorsed by teachers across the vignettes. However, lack of knowledge regarding the role of the school psychologist and lack of access to, or confidence in, mental health providers may contribute to differences in proposed management strategies and ultimate referral likelihood (Reinke et al., 2011; Wienen et al., 2019).

Our results may also reflect an institutional shift in the field of education, such that teachers are increasingly expected to take responsibility for their students' academic achievements, as student performance is perceived as an extension of educator success (Goldhaber & Özek, 2019). Teachers' propensity to propose academic interventions most commonly for students meeting criteria for ADHD may reflect this increased pressure. Specifically, teachers' responses may indicate high levels of self-efficacy, or the strong belief in their ability to successfully facilitate student outcomes themselves (Putwain & von der Embse, 2019).

Implications for Practice and Training

The current study elucidates several implications for clinicians and educators. Perceived referral need is a complex variable that is likely to be influenced by many factors, some of which were undoubtedly outside the scope of this study. While findings from the current study did not indicate the presence of a predictive relationship between student characteristics and teacher knowledge of ADHD, fewer years of teaching experience (< 5 years) predicted a lesser degree of perceived student need as hypothesized. However, a relationship was not found for more experienced educators, highlighting the heterogeneous nature of teaching experience and perception of student need for specialized services.

While the current study did not specifically examine the relationship between years of teaching experience and knowledge of ADHD, investigations focused on clarifying this relationship have produced mixed results. For example, Sciutto et al. (2000) found that more experienced teachers in the United States possessed greater knowledge of ADHD than their less-experienced colleagues, while Jerome et al.,

(1994) and Kos et al. (2004) found no relationship between years of experience and ADHD knowledge in similar populations. Knowledge of ADHD is a nuanced variable, and also likely to be influenced by multiple factors. For example, more experienced teachers may gain knowledge through more exposure to students with ADHD, while less experienced teachers may be less aware of the roles of specialists, ADHD-specific classroom management strategies, and potential long-term consequences for students exhibiting symptoms of ADHD. Alternatively, as a result of increased targeted curricula in pre-service teacher training programs and/or opportunities to obtain additional certifications that focus on mental health issues, it is possible that newer teachers feel more prepared to address ADHD in the classroom for students such as those described in the vignettes and, thus, do not make referrals for students to obtain additional services. If so, these training differences have the potential to explain discrepancies in both teacher understanding of ADHD and levels of self-efficacy as it relates to classroom management practices.

On an institutional level, continued professional development courses and additional pre-service training aimed at increasing teachers' understanding of ADHD and its symptom manifestations, etiology, and management strategies remain vital to improving the screening and referral process and helping schools meet the mental health needs of their students. For example, Latouche and Gascoigne (2019) found that a brief, two-hour training workshop focused on the etiology of ADHD and classroom management strategies was effective in increasing teachers' knowledge of ADHD and self-efficacy in managing associated symptoms in the classroom. Our findings support the need for continued research investigating the efficacy of such in-service programs, specifically pre-service training and professional development curricula aimed at better supporting teachers in identifying and meeting the needs of students with ADHD, particularly female students.

Given our finding that ADHD knowledge, among other teacher-specific factors, did not predict perceptions of student referral needs, the ways in which teachers perceive symptoms of ADHD in the classroom warrant continued investigation. It is plausible that high levels of ADHD knowledge could result in varying degrees of perceived need. For instance, teachers with greater ADHD knowledge may be more able to accurately identify ADHD and possess confidence in referring to available resources, leading them to indicate a high degree of need predictive of initiating a referral. On the other hand, teachers with the same high level of knowledge about ADHD may believe themselves to be better equipped to manage ADHD symptoms in the classroom and therefore, perceive a lower need for specialist referral. Consistent with this interpretation, existing literature suggests that preschool teachers with less ADHD knowledge perceive symptoms as more severe and impairing than their more knowledgeable colleagues (Poznanski et al., 2021). Despite requiring cautious interpretation due to sample differences, this finding should be further examined with a sample of elementary school educators, as it provides support for the role of ADHD knowledge in teachers' perceptions of classroom behavior and by extension, teacher-initiated referrals.

Findings from the current study also highlight potential opportunities to strengthen collaboration and consultation between school psychologists and educators to bridge the gap between research and practice to better meet the diverse mental health and behavioral needs of students in schools. For example, participants in the current study frequently identified consulting with school psychologists prior to making specialist referrals; however, teachers were less likely to consider behavioral interventions in the classroom for students with ADHD. This suggests that teachers may not be aware that school psychologists are trained to provide consultation to support behavioral interventions within the classroom. Aligned with these findings, in a study examining perceptions of the roles of teachers and schools in supporting student mental health, 89% of teachers reported believing it is the school's responsibility to address students' mental health needs; however, a mere 34% believed they possessed the skills necessary to address these concerns (Reinke et al., 2011). The scarcity of mental health professionals in schools was also identified by teachers (82%) as a consequential barrier to supporting students with mental health needs. Further, almost 50% of teachers reported they were not familiar with the term "evidence-based" (Reinke et al., 2011). Teachers in the current study also indicated that their prior experiences with specialist services influenced their decision-making regarding student referrals. School psychologists should consider the importance of positive consultation experiences for teachers in providing indirect services to promote student mental health in schools. Without exposure to the role and expertise of school psychologists, educators' understanding of ADHD and its differential presentations, as well as their ability to manage related symptoms, will likely suffer.

Limitations

Despite some interesting findings that extended previous work in this area and included a sample of teachers from the United States, the current study is not without limitations. First, the small and relatively homogenous sample limits the overall generalizability of these findings. While convenience samples provide accessibility and ease to recruitment, they also pose challenges to the generalizability of results to the larger population looking to be studied (Etikan et al., 2016). Due to the nature of this sampling technique, participants were likely to be located in similar communities,

social and professional networks, or geographic locations as the researchers. This method of sampling poses the potential to fail to accurately represent the attitudes and behaviors of the desired population looking to be studied—in this case, elementary school teachers across the United States. The sample was also largely homogeneous in many respects. For example, a higher portion of our respondents identified as female (94%), compared to recent estimates of elementary school teachers in the United States, of which 89% identify as female (National Center for Education Statistics, 2021). Only three respondents identified as male and none identified as outside of the male/female gender binary, further limiting the generalizability of our findings to teachers who do not identify as female. As 80% of respondents indicated working in a suburban setting and 20% in an urban setting, our sample did not capture the experiences and perspectives of teachers working within rural settings, which presents an additional limitation.

Secondly, due to the nature of the survey questions, social desirability bias may have skewed participant responses. Social desirability bias refers to the tendency of respondents to select responses perceived to be more desired by researchers, rather than those responses that reflect their genuine beliefs and attitudes (Grimm, 2010). Such bias may explain the vast majority of responses pertaining to perceived degree of need being clustered towards neutral perceptions, whereas perceptions likely reflect a greater diversity of attitudes. As previously discussed, it is possible that teachers indicated lesser degrees of student need because they felt, or were motivated to appear, competent in addressing ADHD symptoms in the classroom. Future studies could include a measure of perceived competence to more accurately measure this construct of interest.

Thirdly, given the primary aim of the current study to investigate potential differences in teacher-initiated referrals for ADHD between male and female students, binary gendered language was utilized throughout the survey. Therefore, our vignettes do not accurately reflect the experiences of students identifying as non-binary, transgender, genderqueer, or gender-fluid, whose presentations of ADHD may vary.

Future Directions

To further explain the relationships that influence the identification of ADHD and teacher-initiated referrals, several directions for future research are recommended. In order to reflect the diversity of student and teacher experiences in the U.S., it is critical that future research include larger and diverse samples, with a particular focus on capturing the experiences of students who may identify as outside of the male/female binary, racially/ethnically minoritized students, and educators who teach in rural communities.

As mentioned, the current study focused specifically on male and female identifying students with ADHD. Individuals identifying as outside of the male/female gender dichotomy are much more likely to be diagnosed with ADHD when compared with their male or female-identifying peers (Dawson et al., 2017; Thrower et al., 2020). However, it is well-documented that gender non-conforming individuals face barriers to accessing appropriate and affirming healthcare (Anzani et al., 2019; Coleman et al., 2012). The intersection of marginalized gender identities and the presence of ADHD leave youth at a particularly high risk of negative mental health outcomes including anxiety, depression, and suicide, increasing the already critical nature of early and affirming identification and intervention. Given a substantial gap in literature studying these populations, it is imperative that future research examine the role of teachers in the identification and referral process, while explicitly addressing the heterogenous experiences of transgender, gender-fluid, and gender non-binary youth with ADHD.

Additionally, this study did not specifically address students' racial or ethnic identities or the differential experiences of racially minoritized youth with ADHD and teachers' decision-making processes. In schools, research has shown that students of color are under-diagnosed with ADHD and over-punished for classroom behavior (Moody, 2016). Discrepancies in teacher perceptions of student behavior likely reflect both systemic and institutional racism, which further contribute to the vast range of minority stress and/or racial trauma experienced by racially and ethnically minoritized youth leading to negative mental health outcomes, including suicide risk (Polanco-Roman et al., 2022). Therefore, it is critical that future researchers investigate the role that an ADHD diagnosis plays in teachers' conceptualization of student behavior and proposed management strategies for racially and ethnically minoritized students.

The current study focused primarily on factors predicting teacher referrals. While teachers identified the presence of ADHD at varying rates across groups, other difficulties were concurrently or independently recognized, such as hyperactivity, attentional challenges, behavioral challenges, and learning difficulties. Future research should investigate how the identification of these difficulties influences teachers' perceived need and proposed management of symptoms. To date, few studies have explored the function a student's formal ADHD diagnosis serves for teachers and how it benefits students in school settings. One such qualitative study examined teachers' perceptions of an ADHD educational classification, with results suggesting significant teacher ambivalence about the function this label serves in accounting for and managing students' associated emotional, behavioral, and academic manifestations of ADHD in the classroom (Wienen et al., 2019). In other words, findings demonstrate that teachers perceive both advantages and disadvantages for

students when considering the practical value of an ADHD classification, which likely has implications for both teacher referral behavior and how symptoms are managed in the classroom. While outside the scope of the current study, further exploration of larger sample sizes and data subjected to between-group significance testing is warranted to discern the relationship between teachers' identification of ADHD, their perceived degree of student referral need, and its ultimate connection to school-based services in the best interests of students.

According to recent literature, many teachers feel ill-equipped to handle the behavioral and emotional challenges associated with ADHD symptoms in the classroom (Reinke et al., 2011). While it is plausible that knowledge of ADHD and years of experience contribute to teacher self-efficacy, future researchers should consider other potential contributing factors, including role conflict, accountability mechanisms, and perceived school-wide support (Perryman & Calvert, 2020), as such factors are likely to impact teachers' perception of symptoms and likelihood to utilize available resources for consultation or referral.

Finally, researchers should consider the use of qualitative methods to enrich our understanding of teachers' conceptualizations of student behavior, as well as their experiences with students and decision-making processes regarding referrals. For example, teachers working in a solely general education classroom may have more experience with students who have, or have not, been diagnosed with ADHD than those working in another general education, or integrated/co-taught classroom. Gathering qualitative data to better understand teachers' breadth of experience and nuanced attitudes will enrich our findings and ultimately, the field's understanding of the educator-initiated referral decision making process and the factors that influence it.

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Declarations

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