

2017

School Professionals' Knowledge and Attitudes About Child Mental Health: Child Diagnosis, Gender, and Ethnicity

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SCHOOL PROFESSIONALS' KNOWLEDGE AND ATTITUDES ABOUT CHILD
MENTAL HEALTH: CHILD DIAGNOSIS, GENDER, AND ETHNICITY

BY

UCHENNA J. JONES

A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

IN

CLINICAL PSYCHOLOGY

UNIVERSITY OF RHODE ISLAND

2017

DOCTOR OF PHILOSOPHY DISSERTATION

OF

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2017

ABSTRACT

Among the many children with mental health needs, few actually receive mental health services. The children who do receive services are often initially referred by teachers (Sciutto, Terjesen, & Frank, 2000). However, the potential influences of child characteristics, like symptoms, gender, ethnicity, and school professionals' attitudes on such referral decisions are not well understood. While the existing literature suggests that the students who are most often referred for services present with externalizing problems and are male, there has been little investigation regarding student race or ethnicity and teacher or school personnel referrals for mental health services. The present study used an online survey and vignettes to assess whether student symptoms, gender, and ethnicity influenced school professionals' recognition of child mental health issues and decision to refer the child for mental health services. Additionally, the school professionals' years of experience and attitudes toward child mental illness were explored. Participants included 297 teachers and other school personnel. Results indicated that participants' responses to externalizing symptoms, like ADHD, were influenced by the presence of clinically significant symptoms. With regard to internalizing symptoms, like GAD, participants' recognition and referral intentions were influenced by clinical symptoms and general attitudes about child mental health. There were no significant indications that student gender or ethnicity influenced participants' responses, which contradicts previous findings. This study highlights the need for continued research examining ways to support teachers and other school personnel with the common goal of supporting the

mental health of students. Implications of the current findings and potential future directions in this area of research are further discussed.

ACKNOWLEDGMENTS

This has been quite a journey! It has included numerous twists, turns, ups, and downs and I have been blessed to have wonderful people in my life who have kept me on course throughout it all. I can honestly say that I could not have gotten to this point without you.

I am incredibly thankful for the guidance, encouragement, and support of my major professor, Ellen Flannery-Schroeder. Throughout my time at URI, you have made it clear that you are always ready and willing to support my academic and professional growth. Thank you for your words of encouragement and reminders of the importance of this research.

I have also been fortunate to have the support of my committee members, Andrea Paiva and Tiffani Kisler. Thank you both for your thoughtful contributions to each of my research projects.

In many ways, I share the successful completion of this part of my journey with my family and friends. My family may not fully understand what I have been doing during these years of graduate school, but that has never stopped them from being the most supportive people in my life. My parents have been essential in my progression to this point. They have been incredibly understanding, patient, and simply amazing throughout this process. Thank you for all of your prayers, hugs, comfort food, and love.

I have also been very lucky to have shared this experience with a phenomenal circle of friends. Thank you all for being the wonderful people that you are and

offering relief from the struggles throughout the journey. You all, in your own ways, have made the bumps along the way much more pleasant.

Throughout each of the twists, turns, ups, and downs of this journey, my husband has constantly reassured me. Thank you for being calm in the face of my anxiety, reading the various versions of this dissertation, and cheering me on throughout it all. I could not have done any of this without you. Now that this part of my journey is coming to an end, I look forward to what is next, knowing that everyone who has carried me through to this point shares in each of my future successes.

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CHAPTER 1

INTRODUCTION

About 12-30% of children and adolescents under age 18 are either at-risk for or currently coping with a mental, emotional, or behavioral health problem (Campbell, 2004; Stormont, Reinke, & Herman, 2011; Whitley, Smith, & Vaillancourt, 2013; Williams, Horvath, Wei, Dorn, & Jonson-Reid, 2007). Despite the large number of children with mental health problems, many do not receive mental health services even though they may benefit from them (Koller, Osterlind, Paris, & Weston, 2004; Molins & Clopton, 2002; Williams et al., 2007). Schools can be a great resource of free and convenient mental health services for children and adolescents in need, particularly since children spend a large proportion of their time in school. Since children do not typically self-identify as needing mental health services, they must rely on the adults in their lives for access to such treatment, particularly their parents, teachers, and other caring adults. This highlights the role of teachers and other school personnel in identifying students who may benefit from such services.

Teachers and other school professionals are in a unique position to detect a mental health issue in their students since they interact daily with students of various clinical backgrounds and can observe problematic behaviors as well as changes in behavior (Sciutto et al., 2000). This role is distinct from that of parents who primarily have exposure to their own children rather than groups of children with diverse backgrounds and clinical pictures. Additionally, many parents are not trained in child development and may not recognize atypical child behavior. When a teacher, for

example, has concern about a child's behavior or academic functioning, he or she is often the first to refer the child for an evaluation and can be quite influential in parents' decisions to seek professional help for their child (Molins & Clopton, 2002). Thus, teachers' judgments are influential in the type of evaluations or services provided for the referred child (Campbell, 2003; Molins & Clopton, 2002; Ysseldyke, Christenson, Pianta, & Algozzine, 1983). As professionals, teachers are in a good position to notice when a student is having a problem and refer this child to the appropriate services (Campbell, 2003). Unfortunately, most teachers do not receive training in identifying mental health issues or their appropriate treatments and, consequently, are not always accurate in their referrals (Campbell, 2003; Sciotto et al., 2000). Furthermore, teachers report discomfort with the responsibility of referring children for mental health services because of this lack of training (M. T. Green, Clopton, & Pope, 1996). Considering teachers' importance in children's access to mental health services, it is unfortunate that there is little research available investigating their beliefs about who needs mental health services and how they decide whether or not to make a referral for services (M. T. Green et al., 1996). School professionals' ability to identify a child with a mental health issue and make a referral may be influenced by a number of factors, including student characteristics, characteristics of the school professionals, and the ease of access to mental health services in the school.

CHAPTER 2

REVIEW OF LITERATURE

School Professionals' Mental Health Literacy and Student Characteristics

Symptom type. Research has identified a discrepancy in the rates of referrals and mental health service use among children with internalizing versus externalizing problems (Briesch, Ferguson, Volpe, & Briesch, 2013; M. T. Green et al., 1996; Molins & Clopton, 2002; Papandrea & Winefield, 2011). Internalizing problems are described as a broad band of symptoms, including depression and anxiety, that tend to be directed inward while externalizing symptoms tend to be directed outwardly as aggression or defiance (Briesch et al., 2013; Papandrea & Winefield, 2011). Among children in need of mental health services, children with internalizing disorders tend to be underserved and less likely to receive services than children with externalizing problems (Cunningham & Suldo, 2014). Researchers theorize that the reason for this bias in referral is due to the nature of externalizing disorders, which involve acting out and other troublesome behaviors. This kind of behavior is disruptive in the classroom and is not typically tolerated by teachers (Herbert, Crittenden, & Dalrymple, 2004; Molins & Clopton, 2002). Alternatively, children with internalizing problems are typically overlooked because they are often well behaved in the classroom (Molins & Clopton, 2002). Previous research indicates that teachers generally feel more comfortable identifying externalizing problems than internalizing problems and are about five times more likely to make referrals for children with externalizing problems

even if they are asked to identify all students with emotional difficulties (Cunningham & Suldo, 2014).

One specific example is the case of recognition of Attention Deficit/Hyperactivity Disorder (ADHD) in schools. In general, teachers have reported some comfort in identifying symptoms of ADHD (Sciutto et al., 2000). While several studies have suggested that teachers are generally accurate in recognizing some primary symptoms of ADHD, they are not typically as accurate in their recognition of information related to its treatment or course (Kos, Richdale, & Hay, 2006; Sciutto et al., 2000). This is significant because misinformation about the symptoms, treatment, or course of ADHD may lead well-meaning teachers to provide parents with inaccurate recommendations or overlook students who are struggling but do not fit the teacher's prototype for ADHD (Kos et al., 2006). Teachers tend to have more difficulty identifying symptoms of ADHD other than hyperactivity, like inattention (Sciutto, Nolfi, & Bluhm, 2004). For example, a study by Moldavsky and colleagues presented teachers with vignettes describing children with either combined or inattentive subtypes of ADHD (Moldavsky, Groenwald, Owen, & Sayal, 2013). The majority of the teachers were able to identify that either set of symptoms was problematic, but only the combined subtype was predictive of teachers' recognition of ADHD and the idea that medication would be helpful (Moldavsky et al., 2013). The teachers in this study also indicated that they perceived the problems described in the vignettes as not being severe enough to warrant special services (Moldavsky et al., 2013). Unfortunately, the results of this study suggest that students who are primarily struggling with inattention may not be identified or recommended for services.

An estimated 14-32% of American youth will have a mood or anxiety disorder at some point before the age of 18 (Cunningham & Suldo, 2014). Coping with an untreated mood or anxiety disorder early in life is associated with an increased risk of severe emotional distress later in life, substance use, legal problems, negative life events, poor functioning, suicidal ideation, and suicide completion (Allison, Nativio, Mitchell, Ren, & Yuhasz, 2014; Cunningham & Suldo, 2014; Papandrea & Winefield, 2011). Considering the large number of children impacted by mood and anxiety disorders and the future implications of these issues, it would be ideal for school personnel to be involved in identifying the specific children who are in need of treatment for internalizing problems.

In a study by Cunningham & Suldo, teachers were asked to nominate students who demonstrated symptoms of anxiety and/or depression (Cunningham & Suldo, 2014). Teachers nominated about 41% and 50% of children with elevated self-reported anxiety and depression, respectively (Cunningham & Suldo, 2014). Of all the students who self-reported elevated anxiety and depression, about 60% were not identified by teachers. Unfortunately, this suggests that the majority of anxious or depressed students may be overlooked. In contrast, a study by Green and colleagues suggests that teachers report no significant difference in their intentions to refer children with externalizing and internalizing problems when presented with case vignettes (M. T. Green et al., 1996). The discrepancy between these two studies may indicate a difference between teachers' actual behavior and intended behavior when presented with a vignette.

Student gender differences. Research also indicates that boys are more likely to receive and be referred to services than girls (Campbell, 2003; M. T. Green et al., 1996; Molins & Clopton, 2002; Ysseldyke et al., 1983). A study by Molins and Clopton required teachers to identify three students whose behavior was most concerning, resulting in the teachers being more likely to identify boys than girls (Molins & Clopton, 2002). Some researchers propose that this is because boys tend to present with externalizing problems, which are more disruptive and more likely to be noticed (M. T. Green et al., 1996; Molins & Clopton, 2002). In addition to being more easily recognized by teachers, some research also indicates that externalizing problems may be perceived as being similar to “typical boy behavior.” For example, in a study where teachers were asked to nominate students for referral, teachers were more likely to rate girls with externalizing problems as having more severe problems than their male counterparts (Soles, Bloom, Heath, & Karagiannakis, 2008). This may be due to the idea that a girl with disruptive behaviors is incongruent with typical gender norms, and as such, is more problematic than a boy with similar behavioral problems.

When presented with case vignettes of students with mental health issues, any gender biases tend not to impact intended referral practices (Molins & Clopton, 2002). It is unclear what is responsible for this discrepancy between intended behavior in a hypothetical situation and actual referral practices in the classroom. It seems that there is some interaction between problem type and gender which has the potential to elicit a referral bias. Future research should investigate both intended as well as actual referrals in order to better understand teachers’ decision-making.

Student race and ethnicity. Child race and ethnicity are additional factors that may influence referral decisions. Research indicates that a disproportionate number of African American and Latino students are placed in special education for internalizing problems or are disciplined for concerns about externalizing problems (Bean, 2012; Bryan, Day-Vines, Griffin, & Moore-Thomas, 2012). According to the United States Department of Education Office for Civil Rights, this disproportionality is evident as early as preschool, where even though African American children account for only 19% of preschool enrollment, they represent 47% of preschool out-of-school suspensions (2016). However, it is unclear if this is due to racial bias in referrals, racial differences in symptom expression, or a higher incidence of mental health concerns among minority youth. Unfortunately, research specifically investigating teacher referrals to mental health services for minority students is scarce. Much of the research focuses on disproportionalities in disciplinary actions taken against students of color and academic concerns (Blake, Butler, Lewis, & Darensbourg, 2011; Skiba et al., 2014). Generally, this research indicates that race predicts teachers' tendency to make more disciplinary referral to the school counselor for children of color compared to White children (Bryan et al., 2012).

Research on school professionals' perceptions of emotional and behavioral problems among ethnic minority students has resulted in mixed findings. Race and ethnicity appears to impact problem recognition in some studies and is unrelated to problem recognition in others. For example, a secondary data analysis of a national sample of students found that teachers were more likely to contact the school counselor for behavioral problems with African American students than their

European American counterparts (Adams, Benshoff, & Harrington, 2007). This suggests some relationship between race and referral practices. Alternatively, in a study comparing teacher ratings of ADHD symptoms for African American and Hispanic students to the classroom observations of psychology graduate students, researchers found that the teacher ratings were more consistent with the observation results for minority students than European American students (Hosterman, DuPaul, & Jitendra, 2008). This indicates that teacher reports of ADHD symptoms may not be influenced by race and ethnicity (i.e., not biased), but rather by actual behavior. However, it is unclear whether the raters in either of these studies were accurate in their assessment since no psychodiagnostic assessments were conducted to corroborate diagnoses, thus complicating the argument that the teachers' referrals were accurate responses to their students' symptoms. Additionally, much of this research focuses on African American students with little mention of Latino and Hispanic students. More research is needed in order to better understand the nature of the relationship among race, ethnicity, teacher referrals, and actual symptom expression. A better understanding of this relationship is also needed in non-African American minority students. The existing literature is also limited in the types of symptoms investigated. The focus is largely on generally disruptive behaviors or general emotional problems rather than specific diagnoses. These limitations make it unclear whether the disproportionality of ethnic minority students is due to bias or symptoms, how non-African American minority students are impacted, and whether the influences of teacher referral practices vary by specific symptom presentation.

School Professionals' Characteristics that Impact Mental Health Literacy

Teaching experience. In addition to managing and teaching a classroom of students, teachers are also expected to recognize the need for mental health and academic services while ensuring that their students are equipped with the skills to pass state-mandated testing (Koller et al., 2004). As the demands on teacher responsibilities and the assessments of teacher performance become more challenging and rigorous, teachers may be met with additional barriers to student referrals for mental health services beyond their own mental health literacy. Some of these potential barriers may include teaching experience or the individual's own attitudes about child mental health.

Teachers generally are in a great position to be accurate in identifying problematic behaviors in children due to the fact that they are able to observe a number of diverse children on an almost daily basis (Berg-Nielsen, Solheim, Belsky, & Wichstrom, 2012). Despite this, even experienced teachers who have been teaching for ten or more years have reported feeling inadequately prepared to deal with mental health issues (Koller et al., 2004). Several studies have indicated that years of teaching experience and number of students with ADHD taught predict ADHD knowledge (Kos, Richdale, & Jackson, 2004; Sciotto et al., 2000). In a survey of teachers in New York public elementary schools, Sciotto and colleagues found that knowledge about ADHD was positively correlated with teacher confidence in ability to teach a child with ADHD, number of ADHD students taught, and years of teaching experience (Sciotto et al., 2000). However, in a study investigating the influence of teacher characteristics on the recognition of depressive symptoms in middle school students,

no significant relationship between years of teaching and accurate recognition was found (Auger, 2004). Some research indicates that training in child mental health issues can be beneficial in increasing teachers' knowledge and changing attitudes about treatment and their own ability to control their classrooms (Barnett, Corkum, & Elik, 2012; Jorm, Kitchener, Sawyer, Scales, & Cvetkovski, 2010). However, this research has not demonstrated any change in teachers' referral behavior or student mental health (Jorm et al., 2010). It is unclear how much training and experience influence teachers' problem recognition or referral behavior. Additionally, the current status of research in this area raises questions about under which conditions teaching experience influences teacher problem recognition or referral.

Attitudes about child mental health. Another characteristic that may impact school professionals' problem recognition and eventual referral for mental health services are their attitudes about child mental health and treatment. Unfortunately, research on school professionals' attitudes about child mental health is limited. Additionally, the existing research uses a variety of methods to measure various types of attitudes which makes it difficult to come to an understanding of what teachers' attitudes toward child mental health are and how they may impact their referral practices.

A study comparing teachers in the United States to South Korean teachers examined the influence of teachers' attitudes about referring students for help on teacher referral behavior for ADHD (Lee, 2013). In the U.S. sample of teachers, attitudes accounted for intention to refer after controlling for knowledge about ADHD (Lee, 2013). In this study, the researcher developed an attitudes measure specifically

for the study assessing teachers' beliefs about the value of referring a student to receive services for ADHD (Lee, 2013). This study highlights the potential influence of attitudes on intention to refer a student for mental health services. Unfortunately, the study does not assess teachers' attitudes regarding child mental health in general which may have a unique influence on referral behaviors.

Research regarding the general public's attitudes toward child depression has indicated that adults tend to believe that youth depression is more serious than adult depression and that depressed children are likely to commit violence to others (Perry, Pescosolido, Martin, & Jensen, 2007). Other research suggests that adults have more stigmatizing attitudes toward young children with mental health issues and would prefer to have limited interactions with them (Mukolo & Heflinger, 2011; Pescosolido et al., 2008). It is well known that stigma can act as a barrier to seeking mental health services in general, but this has rarely been assessed in regards to help seeking for child mental health services (Heflinger, Wallston, Mukolo, & Brannan, 2014). In response to this need, Heflinger and colleagues have developed and tested the Attitudes about Child Mental Health Questionnaire among adults in rural communities in order to investigate the relationship between stigma and help-seeking (ACMHQ; (Heflinger et al., 2014) This measure focuses on stigmatizing attitudes toward children with mental health issues and their families.

School Characteristics

In recent years, schools have begun implementing a multi-tiered system of increasing intensities of support for students with emotional, behavioral, and academic needs (Stormont et al., 2011). However, students in need, their teachers, and all school

personnel with whom they interact exist within larger school environments that vary in available resources. To date, no research has investigated teacher referral practices in under-resourced schools versus well-resourced schools. Such research is needed, as teachers in underfunded schools report difficulties managing and motivating students, and children in such schools tend to experience elevated rates of mental health issues (Cappella et al., 2012). A qualitative study by Williams and colleagues assessed two focus groups of teachers – one group consisted of teachers from an urban school with limited resources and a second group consisted of teachers from a better-resourced urban school (Williams et al., 2007). Teachers in both groups expressed that they are often too busy trying to manage the classroom to become better at identifying mental health issues (Williams et al., 2007). Under-resourced schools are typically situated in under-resourced communities. These teachers’ comments highlight the potential impact of the environment outside of the school on student and teacher classroom experience.

The Current Study

Teachers and other school personnel are essential in the provision of mental health service access for children. As professionals who work with children on a daily basis, teachers and other school personnel are in a good position to detect difficulties that interfere with a child’s academic functioning and development. The current study focused on which factors impact school professionals’ recognition of mental health issues and intent to refer students for mental health services. While the study focused on both teachers and other school personnel who interact often with students, the majority of participants were teachers. Thus, the terms “teacher” and “school

professionals” are used interchangeably when referencing the participants of this study. Through the use of online questionnaires and vignettes, participants indicated whether child symptoms, gender, and ethnicity predicted their recognition of child mental health issues and decision-making. Particularly, this study used logistic regression to investigate the influences of these variables on teacher recognition of child mental illness and decision to refer. Additionally, the relationship between teacher knowledge and teacher attitudes about child mental illness was explored. The results of this research provide some insight into the types of support that school professionals and students need in order to promote the mental health of schoolchildren.

Hypotheses

1. Participants will be significantly more likely to identify students with externalizing symptoms (e.g., ADHD) as having an emotional or behavioral health issue than students with internalizing symptoms.
2. Participants will be significantly more likely to report the intention to refer students with externalizing symptoms (e.g., ADHD) than students with internalizing symptoms.
3. Participants will be significantly more likely to identify externalizing symptoms in male students than female students.
4. Participants will be significantly more likely to refer mental health services (e.g., some intervention by a counselor, psychologist, or social worker) for male students with externalizing symptoms than female students.

5. Participants will be significantly more likely to identify minority students (African American and Hispanic) as having a mental health issue than White American students.
6. Participants will be significantly more likely to refer minority students (African American and Hispanic) for mental health services than White American students.
7. Among participants responding to vignettes with diagnosable ADHD symptoms, participants will be significantly more likely to identify externalizing symptoms in minority students than in White American students.
8. Among participants responding to vignettes with diagnosable ADHD symptoms, participants will be significantly more likely to refer minority students for mental health services than White American students.
9. Scores on the ACMHQ and number of years of experience will be significantly different for participants who do and those who do not accurately identify students with mental health issues.
10. Scores on the ACMHQ and number of years of experience will be significantly different for participants who do and those who do not refer students with mental health issues.

CHAPTER 3

METHODOLOGY

Participants

Following approval from the Institutional Review Board at the University of Rhode Island, 110 school employee organizations, superintendents, and education graduate programs were contacted via e-mail for online participation in the present study. Additionally, a market survey company was enlisted for the recruitment of an additional 121 online participants. Of the 297 school personnel who participated, 75.1% (N = 223) were female, 14.8% (N=44) were male, 0.3% (N=1) reported “Other,” and 9.8% (N=29) did not report their gender. The proportion of female to male participants is very similar to that which is reported by the Bureau of Labor Statistics for 2016 elementary and secondary school educators (2017). On average, participants were between 26 and 35 years old. In terms of race, 80.1% (N=238) of participants identified as White, 5.4% (N=16) identified as Black or African American, 2.4% (N=7) identified as Asian, and 0.3% (N=1) identified as either American Indian/Alaska Native or Native Hawaiian/Pacific Islander. The remaining participants either reported that their race was not listed (N=5) or did not report race. Most participants were within their first five years of working in their elementary or middle school (N=125). Additional participant characteristics are presented in Table 1. Participant job titles have been further organized by participant gender in Table 2. The

present sample mostly consisted of teachers who identified as female (N=126) and special educators or guidance counselors who identified as female (N=59) (Table 2).

Table 1. *Participant Demographic Information*

	n	Percentage
Gender		
Female	223	75.1
Male	44	14.8
Other	1	0.3
Not Reported	29	9.8
Race		
White	238	80.1
Black or African American	16	5.4
Asian	7	2.4
American Indian/Alaska Native	1	0.3
Native Hawaiian or Other Pacific Islander	1	0.3
Other	5	1.7
Not Reported	29	9.8
Ethnicity		
Hispanic or Latino(a)	14	4.7
Not Hispanic or Latino(a)	254	85.5
Not Reported	29	9.8
Age (in years)		
18-25	20	6.7
26-35	94	32
36-45	64	21.5
46-55	56	18.9
56-66	34	11.4
Number of Years in Profession		
0-10	174	58.6
11-20	66	22.2
21-30	22	7.4
31-40	6	2

Table 2. *Participant Employment by Gender*

Job Title	Male	Female	Other	Total	Percentage
Teacher	27	126	1	154	51.9
Guidance or Special Education	9	59	0	68	22.9
Administration (e.g., principal, director)	2	14	0	16	5.4
Extracurricular Activity Leader	1	6	0	7	2.4
Library, Media, Technology					
Professional	0	7	0	7	2.4
Tutor	1	1	0	2	0.7
School Nurse	0	2	0	2	0.7
Other	4	8	0	12	4.0

Procedures

Elementary and middle school teachers and other school personnel were invited to participate in a study about student needs. Participants were contacted via an e-mail announcement describing the nature of the study. A hyperlink leading to the online survey was included within the e-mail announcement. Each participant indicated consent prior to beginning the online survey. The online survey included demographic information as well as a vignette-based measure of educator mental health literacy and a measure of attitudes about child mental health. Surveys were administered using SurveyMonkey, an online survey and questionnaire tool. The survey required approximately 15 minutes to complete.

Measures

Demographic questionnaire. Participants reported their age, gender, ethnicity, role/job title at the school, and number of years in that position. Participants also rated the overall supportiveness of their work environment, identified which mental health services are offered at their school, and reported whether they had received prior training in child mental health issues. (See Appendix A)

Attitudes about child mental health. The Attitudes about Child Mental Health Questionnaire (ACMHQ) was used as a measure of participants' stigmatizing attitudes toward children with emotional and behavioral problems and their families (Heflinger et al., 2014). The ACMHQ is a 30-item measure covering both public and personal stigma reflecting the respondent's opinion of what others think and the respondent's own opinions, respectively (Heflinger et al., 2014). The measure consists of four subscales: child dangerousness/incompetence, general stereotypes, community

devaluation/discrimination, and personal attitudes. Participants were asked to indicate how much they agree with each statement from 0 (strongly disagree) to 6 (strongly agree). Cronbach's α for each subscale indicated good internal consistency ranging from 0.78 to 0.96 (Heflinger et al., 2014). (See Appendix B)

Vignette questionnaire. A case vignette questionnaire was developed for the present study. Each participant was presented with two vignettes – one presenting with internalizing symptoms and the other presenting with externalizing symptoms. Some vignettes described a student who met diagnostic criteria for diagnosis by the Diagnostic and Statistical Manual of Mental Disorders and others described a student who did not meet full criteria for any diagnosis (American Psychiatric Association, 2013). The two diagnosable vignettes depicted students with symptoms of Generalized Anxiety Disorder (GAD) and ADHD. The other two vignettes described a conscientious, but not anxious, student and an energetic, but not excessively hyperactive, student. For each vignette, the gender and ethnicity of the student were manipulated in order to assess for differences in recognition or misrecognition based on gender and ethnicity. The three ethnicities included African American, White American, and Hispanic. Participants were randomly assigned to review one vignette with potential internalizing symptoms and one vignette with potential externalizing symptoms. In total, there were 24 variations of vignettes.

Each vignette was followed by questions requiring the participant to identify the student's problem, rate the severity of the problem, and identify whether the student should be referred for services. Additionally, the participants were asked to

indicate if they had ever had a student with a similar problem and identify how they responded. (See Appendix C)

CHAPTER 4

RESULTS

Descriptive Statistics

In order to best evaluate the characteristics of the current sample, descriptive statistics and correlations among variables were computed. In an examination of the assumptions for multivariate analyses of variance (MANOVA), means, standard deviations, tests of normality, and correlations for attitudes toward child mental health and years of work experience were calculated (Table 3). The Shapiro-Wilk test of normality revealed that attitudes were normally distributed in the current sample. However, years of experience were not distributed normally, violating one of the MANOVA assumptions. Attitudes toward child mental health was significantly and negatively correlated with years of experience, Pearson's $r = -0.14$, $p < 0.05$. Scores on the ACMHQ averaged at 95.8 out of a potential high score of 180, indicating that the participants in the present study did not hold many stigmatizing beliefs (Table 3).

Table 3. *Descriptive Statistics for Continuous Variables*

	N	Mean	Standard Deviation	Shapiro-Wilk Test of Normality
Attitudes Toward Child Mental Health	216	95.8	25.36	0.04
Years of Experience	268	9.38	7.98	0.17*

* $p < 0.001$, A significant Shapiro-Wilk statistic suggests that the variable is not normally distributed.

Table 4 outlines the characteristics of the students in the study vignettes and the number of participants who viewed each type of vignette. Table 5 displays the percentage rates of problem recognition by student ethnicity, gender, and symptom

type. The student group that had the lowest percentage of participants who noted a problem was White male students with potential ADHD symptoms (Table 5). Out of all of the African American females with potential GAD symptoms, 64% of the students were identified as having a problem (Table 5).

Table 4. *Participants Who Read Each Vignette Type*

	Male Vignettes (n)	Female Vignettes (n)
African American Vignettes		
Diagnosable ADHD	20	18
Non-Diagnosable ADHD	19	15
Diagnosable Anxiety	22	17
Non-Diagnosable Anxiety	23	16
Hispanic Vignettes		
Diagnosable ADHD	24	21
Non-Diagnosable ADHD	13	13
Diagnosable Anxiety	18	28
Non-Diagnosable Anxiety	23	24
White Vignettes		
Diagnosable ADHD	19	22
Non-Diagnosable ADHD	21	29
Diagnosable Anxiety	15	22
Non-Diagnosable Anxiety	13	22

Table 5. *Problem Recognition Rates by Student Demographics*

	Male (%)	Female (%)	Genders Combined (%)
African American	45	55	49
GAD	47	64	54
ADHD	44	45	44
Hispanic	53	48	50
GAD	51	48	49
ADHD	54	47	51
White	41	48	45
GAD	50	59	56
ADHD	35	39	37

Table 6 outlines rates of problem recognition accuracy, where accurate recognition included both true positives and true negatives. The percentage of accurately

recognized students was generally higher for male students than female students; except in the case of Hispanic students, where a higher percentage of participants accurately recognized problems in Hispanic female students than Hispanic male students (Table 6). The highest percentage of participants who accurately recognized a mental health problem was in 92% African American male students with potentially ADHD symptoms (Table 6). Table 7 shows the rates of referral intentions in percentages by student characteristics. The lowest percentage of students referred for special services was White female students with potential ADHD symptoms, where only 35% of those students were referred for services (Table 7).

Table 6. Problem Recognition Accuracy Rates by Student Demographics

	Male (%)	Female (%)	Genders Combined (%)
African American	81	77	79
GAD	71	70	71
ADHD	92	85	89
Hispanic	68	74	71
GAD	68	75	72
ADHD	68	74	70
White	79	71	74
GAD	82	59	68
ADHD	78	80	79

Table 7. Referral Intention Rates by Student Demographics

	Male (%)	Female (%)	Genders Combined (%)
African American	51	52	51
GAD	60	61	60
ADHD	41	42	42
Hispanic	55	60	58
GAD	66	65	66
ADHD	43	53	48
White	44	52	48
GAD	46	70	61
ADHD	43	35	38

Influence of Symptom Presentation on Problem Recognition and Referral

Hypothesis 1. Two logistic regression analyses were conducted to assess the odds of symptom presentation predicting participants' identification of a mental health issue (GAD or ADHD), regardless of accuracy. The dichotomous outcome variable in each analysis was participants' report that the student did or did not have an emotional or behavioral problem. The predictor variable was the symptoms of the student in the vignette. Symptoms were categorized dichotomously as meeting or not meeting diagnostic criteria for GAD or ADHD.

The first analysis focused on participants' identification of GAD symptoms as an emotional problem. The full model correctly classified 69.0% of participants who identified GAD and 70.6% of those who did not, with an overall success rate of 70.1%. The result of the regression analysis revealed that the presence or absence of diagnosable anxiety symptoms reliably predicted a participant's identification of an anxiety problem. The odds ratio indicated that vignette characters with non-clinical GAD behaviors were 5.51 times more likely than those with clinical anxiety symptoms to be recognized by participants as not having an emotional problem ($OR = 5.51 [3.14, 9.66], p < 0.001$).

A second regression analysis focused on the identification of ADHD symptoms as a problem. The model correctly classified 88.2% of participants who identified ADHD and 71.8% of those who did not, with an overall success rate of 79.5%. According to the regression analysis, the presence or absence of diagnosable ADHD symptoms significantly predicted participants' problem recognition. Specifically, participants were 18.97 times more likely to accurately deny a problem

for vignette characters with non-clinical externalizing behaviors than for characters with diagnosable ADHD symptoms ($OR = 18.97 [9.44, 38.15], p < 0.001$).

Hypothesis 2. Two logistic regression analyses assessed the likelihood of symptom presentation predicting participants' intention to refer students for mental health services. The independent predictor variables were the student symptoms. Again, symptoms were categorized dichotomously as meeting or not meeting diagnostic criteria for GAD or ADHD. The outcome variable in each analysis was participants' reported intention to refer or not refer the student for services.

The first analysis focused on participants' responses to potentially anxious student vignettes. The full model correctly classified 67.8% of participants who reported the intention to refer the student and 79.1% of those who did not. Overall, the model successfully classified 72% of participants. The result of the regression analysis revealed that the presence or absence of diagnosable anxiety symptoms reliably predicted a participant's referral for services in response to anxiety symptoms. The odds ratio indicated that participants were 7.96 times more likely not to refer vignette characters with non-clinical behaviors than those with clinical anxiety symptoms ($OR = 7.96 [4.33, 14.65], p < 0.001$).

A second regression analysis focused on referral intentions for students with potential ADHD symptoms. This model suggests that ADHD symptoms distinguish between participants who did and did not refer the student in the vignette for mental health services. The model correctly classified 83.8% of participants who intended to refer the student for services and 69.6% of those who did not, with an overall success rate of 75.6%. According to the regression analysis, the presence or absence of

diagnosable ADHD symptoms significantly predicted participants' likelihood of referring the student for services. Specifically, participants were 11.9 times more likely not to refer students with non-clinical ADHD-like behaviors than students with clinical ADHD symptoms ($OR = 11.9 [6.22, 22.76], p < 0.001$).

Influence of Student Gender on ADHD Recognition and Referral

Hypothesis 3. A logistic regression was conducted to test the likelihood of female and male vignette characters with diagnosable ADHD and non-diagnosable externalizing behaviors being recognized as students with significant mental health concerns. Gender served as the independent variable while participants' problem recognition, regardless of accuracy, was the dependent variable.

A test of the model with student gender as the predictor compared to a constant-only model was not statistically significant, $\chi^2 (1, N = 234) = 0.01, p > 0.05$, indicating that gender was not a reliable method of distinguishing between participants who did and did not report an emotional or behavioral problem. The model classified all participants who denied a behavioral problem and did not correctly classify any participants who reported a problem. Thus, 56.4% of participants were accurately classified overall. The regression analysis indicated that ADHD problem recognition could not be predicted by the described student's gender, ($OR = 0.97 [0.58, 1.63], p > 0.05$).

Hypothesis 4. Another logistic regression was conducted to test the likelihood of male vignette characters with and without diagnosable ADHD symptoms being referred for mental health services. Similar to the previous analysis, the model with gender as a predictor was not statistically significant $\chi^2 (1, N = 234) = 0.00, p > 0.05$,

indicating that gender did not distinguish between participants who did and did not report the intention to refer vignette students for mental health services. The regression analysis indicated that referral intention for potential externalizing problems could not be predicted by gender, ($OR = 1.01 [0.60, 1.69], p > 0.05$).

Influence of Student Ethnicity on Problem Recognition and Referral

Hypothesis 5. Two logistic regression analyses were conducted to assess the odds of the predictor variables, African American, Hispanic, and White vignette character ethnicities, predicting participants' recognition of anxiety or ADHD, regardless of accuracy. The dichotomous outcome variable in each analysis was participants' report that the student did or did not have an emotional or behavioral problem.

The first analysis focused on ethnicity and the recognition of anxiety symptoms. The model including student ethnicity as a predictor was not statistically significant compared to a constant-only model, $\chi^2 (2, N = 243) = 0.67, p > 0.05$. This suggests that ethnicity did not significantly distinguish between participants who reported an anxiety problem and those who did not. The model with ethnicity as a predictor accurately classified 64.1% of participants who reported that the student in the vignette had an emotional or behavioral problem and 40.9% of participants who denied a problem. Overall, the model accurately classified 53.1% of participants. The regression analysis indicated that anxiety recognition was not significantly related to vignette student ethnicity. The odds ratios indicated that participants were not significantly more or less likely to identify an African American ($OR = 1.07 [0.56, 2.04], p > 0.05$) or Hispanic ($OR = 1.28 [0.69, 2.37], p > 0.05$) student as having an anxiety problem than a White student.

The second logistic regression analysis focused on recognition of ADHD symptoms. A test of the model using the three ethnicity groups as predictors was not statistically significant compared to a constant-only model, $\chi^2 (2, N = 234) = 2.93, p > 0.05$. Again, ethnicity did not significantly differentiate between participants who reported a problem and those who did not. The model classified 35.3% of participants who reported a behavioral problem and 73.5% of those who denied a problem, with an overall success rate of 56.8%. Odds ratios indicated that participants' likelihood of identifying a behavioral problem did not significantly differ by ethnicity. Participants were not significantly more or less likely to identify an African American ($OR = 0.75$ [0.40, 1.40], $p > 0.05$) or Hispanic ($OR = 0.58$ [0.31, 1.09], $p > 0.05$) student as having ADHD than a White student. While not statistically significant at the conventional 0.05 alpha, the relationship between recognition of ADHD and Hispanic student ethnicity approached significance ($p = 0.09$). This result suggests a possible trend where participants were more likely to identify a problem in Hispanic students than for White students, regardless of accuracy.

Hypothesis 6. Two logistic regression analyses were conducted to assess the likelihood of participants' intentions to refer for a mental health issue being predicted by any of three ethnic groups. For both analyses, the independent variable included three groups of students – African American, Hispanic, and White. The outcome variable was participants' intention to refer the student described in the vignette.

The first analysis focused on participants' referral for a student with anxiety symptoms. A model with the three ethnicity groups as predictors was not statistically significant compared to a constant-only model, $\chi^2 (2, N = 243) = 0.61, p > 0.05$. The

test of this model indicated that ethnicity was not a reliable method of differentiating between participants who would and would not refer the student with anxiety symptoms. There were no statistically significant odds ratios in the regression analysis, meaning that neither African American ($OR = 1.04 [0.54, 2], p > 0.05$) nor Hispanic ($OR = 0.82 [0.44, 1.56], p > 0.05$) students with potential anxiety symptoms were more or less likely to be referred by the participants than White students.

A second logistic regression was conducted focusing on referral likelihood for symptoms of ADHD. A test of a model including the three student ethnicity groups as predictors was not significantly better than a constant-only model, $\chi^2 (2, N = 234) = 1.47, p > 0.05$. The regression analysis indicated that referral intention for ADHD symptoms could not be predicted by ethnicity. Specifically, African American students ($OR = 0.88 [0.47, 1.64], p > 0.05$) and Hispanic students ($OR = 0.68 [0.36, 1.28], p > 0.05$) were not significantly more or less likely to be referred for ADHD symptoms than White students.

African American and Hispanic Ethnicities and ADHD Symptoms

Hypothesis 7. A logistic regression analysis assessed whether participants accurate recognition of ADHD could be predicted by ethnicity. This analysis was conducted with the sample of participants exposed to the diagnosable ADHD vignettes of varying ethnicities and genders. A test of the model with ethnicity as the predictor was not statistically significant compared to a constant-only model, $\chi^2 (2, N = 124) = 2.77, p > 0.05$. This model accurately predicted 71.8% of participants' accurate problem recognition. The regression analysis indicated that accurate recognition of

ADHD was not predicted by African American student ethnicity ($OR = 0.49 [0.17, 1.39], p > 0.05$) or Hispanic student ethnicity ($OR = 1.08 [0.44, 2.66], p > 0.05$).

Hypothesis 8. Another logistic regression within the sample of participants who read a diagnosable ADHD vignette assessed the likelihood that the intention to refer for mental health services could be predicted by student ethnicity. The model including ethnicity as a predictor was not significantly different than the constant-only model, $\chi^2 (2, N=124) = 0.77, p > 0.05$. Odds ratios indicated that neither African American ethnicity ($OR = 0.88 [0.34, 2.30], p > 0.05$) nor Hispanic ethnicity ($OR = 1.31 [0.54, 3.19], p > 0.05$) were significantly related to participants' referral intention.

Influence of Attitudes and Experience

Hypothesis 9. A two-way multivariate analysis of variance (MANOVA) was conducted to test for significant differences in attitudes toward child mental health (ACMHQ total score) and years of experience working with students between participants who accurately recognize mental illness and those who do not. The MANOVA compared the means of the dependent variables (ACMHQ total scores and years of experience) between participants who do and do not accurately recognize a mental health issue.

An interpretation of the Pillai's Trace MANOVA summary index revealed that the combined dependent variables did not significantly differ by accuracy in recognition of ADHD, $F(2, 216) = 1.68, p > 0.05$. However, the combined dependent variables did differ significantly by accuracy in recognition of anxiety, $F(2, 216) = 3.56, p < 0.05$. This relationship was further inspected through a univariate analysis of variance (ANOVA), which indicated that participants who accurately recognized anxiety symptoms reported fewer stigmatizing attitudes toward child mental health

than those who were inaccurate, $F(1, 216) = 7.11, p < 0.01$. There was no significant difference in years of experience based on accuracy of anxiety recognition, $F(1, 216) = 0.32, p > 0.05$.

Hypothesis 10. Another two-way MANOVA was conducted in order to assess whether there was a significant difference between participants who would and would not make a referral for a child with symptoms of anxiety or ADHD based on attitudes toward child mental health and years of experience. The two dependent variables in this analysis were ACMHQ total scores and years of experience. The independent variables were willingness to refer for symptoms of anxiety and symptoms of ADHD.

According to Pillai's Trace MANOVA summary index, the combined dependent variables did not significantly differ by willingness to refer for symptoms of anxiety ($F(2, 216) = 0.25, p > 0.05$) or ADHD ($F(2, 216) = 1.71, p > 0.05$).

Subsequent ANOVAs also showed no significant differences between participants who would or would not refer the student in the vignette based on attitudes and years of experience.

CHAPTER 5

DISCUSSION

The results of this study suggest that clinical symptoms of GAD and ADHD predict school professionals' recognition of a student problem and intention to refer that student for mental health services. Other student characteristics, including student gender and ethnicity, were not associated with problem recognition or intention to refer for mental health services. These results offer an optimistic view of school professionals' ability to recognize emotional and behavioral problems in students primarily based on the students' presentation rather than being overly influenced by gender or racial biases. Additionally, participants who accurately recognize anxiety hold fewer stigmatizing attitudes about child mental illness than those who are inaccurate in the identification of anxiety. Otherwise, neither attitudes toward child mental health disorders nor years of experience significantly impacted problem recognition accuracy or intention to refer for services.

Among the variables assessed in this study, symptoms of ADHD and GAD were the only significant predictors of teachers' problem recognition and referral for services. The current finding is consistent with prior research which has noted that teachers are able to identify symptoms of combined ADHD accurately (Kos et al., 2006; Moldavsky et al., 2013; Sciutto et al., 2000). However, with regard to students with anxiety and other internalizing problems, other studies have demonstrated inconsistencies in teachers' ability to recognize or refer such students appropriately (Cunningham & Suldo, 2014; Green et al., 1996). The current study indicated that

teachers can successfully recognize and intend to refer anxious students for mental health services when presented with a vignette. This is consistent with other vignette-based research, where teachers were just as likely to recognize or refer students with externalizing and internalizing problems (Green et al., 1996; Moldavsky et al., 2013). When assessed using alternative methodologies, such as student nomination, teachers have been reported to be less likely to notice students with elevated anxiety and depression (Cunningham & Suldo, 2014). This difference in results indicates that there may be additional factors that moderate teachers' likelihood to recognize a problem and refer the student. It is important to consider the specific differences between exposure to a student in a vignette and exposure to an actual student. In reality, students exist within a classroom of several other students and within a larger school system. A student in a vignette exists in isolation without the distraction or added stress of other students' behaviors or the expectations of the school administration. Thus, it may be that the reader is able to focus on the information that is most relevant to the question of whether the student has a problem or needs specialized services. Within the present sample of teachers and educational professionals, participants were largely able to notice problematic symptoms of mental health concerns. Overall, this indicates that teachers are capable of identifying mental health issues within their students under the ideal conditions provided within a vignette.

Gender was hypothesized to impact teachers' responses to student mental health concerns such that male students were more likely to be identified and referred for additional services than female students. Prior research and statistical evidence has shown that boys are more likely to be recognized as having a behavioral or emotional

problem and are more likely to receive specialized services in school (Campbell, 2003; M. T. Green et al., 1996; S. P. Green, Shriberg, & Farber, 2008; Loades & Mastroyannopoulou, 2010; Molins & Clopton, 2002; Ysseldyke et al., 1983). In contrast, the present data indicated no significant difference in teachers' report of a mental health concern in male and female students. A few other studies have demonstrated a similar pattern of results (Kelter & Pope, 2011; Percy, Clopton, & Pope, 1993). Percy and colleagues suggested that one reason teachers do not consistently demonstrate a gender bias in response to student emotional or behavioral problems may be due to a difference between teachers' beliefs about child mental health disorders, which appear to be unbiased, and teachers' actual practices (Percy et al., 1993). However, the hypothetical nature of the data collected does not seem to fully explain the inconsistent relationship between student gender and teachers' problem recognition and response, as Loades and Mastroyannopoulou's research demonstrated this relationship with the use of vignettes in England (Loades & Mastroyannopoulou, 2010). It seems that the relationship between student gender and teacher recognition and response to student mental health concerns is more complex than existing research has investigated. It is possible that one or more variables are also involved in this relationship. Perhaps there is some interaction with certain characteristics related to teachers' own demographics and student gender that influences teachers' response patterns to students in need of services. More research is warranted in order to better understand underlying factors causing student gender to influence teacher decisions in certain circumstances and not in others.

According to the present data, student race and ethnicity did not impact teachers' problem recognition or their intentions to refer students for help. This result remained true in both the case of ADHD and GAD. Student race and ethnicity also did not affect teachers' recognition of or referral of diagnosable ADHD. Although there seemed to be a trend indicating that Hispanic students with clinical and subclinical ADHD may be more likely than White students to be identified as having a problem, this finding did not meet statistical significance. Overall, these findings suggest that teachers' intended responses to students with emotional and behavioral problems is not racially biased, which is consistent with the findings of Alegría and colleagues (2012). Although this is contrary to much of the existing research about student race and adult recognition of mental illness, it is an encouraging finding as it indicates a progression toward less racially biased educational professionals and potentially more appropriate emotional and behavioral support for young students of color. Another possible explanation may be related to the regulation of implicit attitudes when experiencing high cognitive load, such as when engaging in taxing activities. Cognitive load describes the amount of mental activity imposed on one's working memory (Burgess, Beach, & Saha, 2017). According to social cognitive psychology, people are typically able to regulate their prejudices in order to prevent them from engaging in socially undesirable prejudicial behavior (Buzinski & Kitchens, 2017). However, when these self-regulatory systems are fatigued, such as when there are high-cognitive demands, people are less capable of inhibiting automatic attitudes and behaviors (Buzinski & Kitchens, 2017; Johnston et al., 2017). In the case of teachers, it is reasonable to consider that they are often in situations that are cognitively taxing,

which may influence their judgments about which students' behaviors are related to a mental health issue and which students would benefit from mental health services. Specifically, it is possible that under typical circumstances, a well-meaning teacher may be more susceptible to responding to student behavior based on underlying biases. Researchers have found that this may be the case with medical professionals, mental health clinicians, and parents (Burgess et al., 2017; Johnston et al., 2017). In the present study, the potentially cognitively taxing characteristics of the classroom are eliminated, as teachers were asked to consider information about hypothetical students in vignettes rather than actual students in their own classrooms. It is possible that participants experienced low cognitive load while participating in the present study, which made it easier to inhibit biased responses, if present. The impact of cognitive load on teacher recognition of mental illness in their students and response should be investigated in future research.

The present study proposed that teachers' attitudes and years of experience would be related to accurate problem recognition and intended referral practices. Results suggested that there was no difference in years of experience between teachers who accurately recognized anxiety or ADHD symptoms and those who were inaccurate. Years of experience has been reported to influence knowledge about ADHD while being unrelated to recognition of internalizing symptoms, such as in the case of anxiety disorders (Auger, 2004; Kos et al., 2004; Sciotto et al., 2000). Perhaps the relationship between problem recognition and experience differs by the specific behaviors exhibited. Or, perhaps more experienced teachers (e.g., teachers who have been teaching for many years) benefit from increased exposure to various student

presentations while less experienced teachers benefit from improved pre-service or in-service training, resulting in no significant relationship with problem recognition. It is also important to consider the concept that experience can be measured in other ways than number of years in a profession, such as exposure to students with specific symptoms, coursework, or the pursuit of independent learning. Research regarding experience and ADHD coded experience by years and also accounted for the number of students with ADHD taught (Sciutto et al., 2000). In the future, it may be necessary to measure teacher experience in various ways in order to better understand why experience seems relevant to teachers' problem recognition accuracy in some studies but not others. Additionally, there was no difference in attitudes toward child mental illness between teachers who did and those who did not accurately recognize ADHD. However, hypothesis 9 was partially supported, as the results also suggested that participants who accurately recognized anxiety symptoms had fewer stigmatizing attitudes toward child mental illness than those who were inaccurate. It seems that attitudes, as measured by the ACMHQ, have differing impacts on the recognition of ADHD and GAD. The idea that participants who accurately recognized anxiety symptoms in the vignettes have fewer stigmatizing attitudes about child mental health in general may be related to a greater familiarity with child mental illness or overall mental health literacy. However, no difference in attitudes was found in the case of ADHD recognition. Familiarity with ADHD symptoms within this sample may be fairly widespread, as teachers are commonly well-educated about ADHD. It is possible that participants' knowledge about ADHD overshadowed any potential effect that stigmatizing attitudes would have had on their recognition of symptoms. Teacher

attitudes about child mental health warrants increased attention, as their beliefs may influence their approach to students presenting with mental illness.

The present research also indicated no significant relationship between years of teaching experience, attitudes about child mental illness, and intention to refer a student for anxiety or ADHD symptoms. This is somewhat contrary to Lee's (2013) findings, which suggested a relationship between attitudes toward student referral and intention to refer a student. It is reasonable that one's attitudes about child mental health in general would be distinct from beliefs about the act of student referral. As the first study assessing school professionals' stigmatizing beliefs about children and adolescents with mental health concerns, a result indicating that their attitudes do not impact their likelihood to refer a child for services is encouraging. This finding suggests that even if a teacher holds generally unfavorable opinions about young people with mental health concerns, these beliefs may not influence their referral behavior. However, it would be worthwhile to further investigate what, if any, impact such attitudes have on teachers' referral likelihood. It is possible that the present finding would be different if assessing actual behavior.

Limitations

The present study has several limitations which should be considered. Specifically, this study is limited by its sample and the use of self-reported, hypothetical data. Generalizability of the current findings is limited by a small homogenous sample. The sample primarily consisted of White, non-Hispanic female educational professionals. Thus, the results may not be representative of school professionals of different ethnic backgrounds or of the male gender. However, it

should be noted that White, non-Hispanic females are typically overrepresented among educational professionals (United States Department of Labor Bureau of Labor Statistics, 2017). The small sample size may have compromised the statistical power actually obtained in this study. This may have reduced the number of statistically significant findings as well as the generalizability of these findings. The presentation of the vignettes may have been an additional limitation. Vignettes were presented in the same order for all participants, with potential GAD vignettes being presented first and potential ADHD vignettes being presented second. Participants who terminated their participation in the study after the first vignette only viewed vignettes with clinical or non-clinical GAD. As a result, fewer participants responded to ADHD symptoms, which likely impacted statistical power as well. Additionally, the hypothetical children in the vignettes were simplified representations of child mental illness, as they each presented with a single potentially clinical diagnosis and there were only two diagnoses presented (GAD and ADHD, combined presentation). Although these diagnoses represent two common childhood mental health concerns, the vignette questionnaire did not encompass a wide spectrum of symptom presentations that could be seen in an elementary or middle school. Similarly, the vignettes were limited in their presentation of child gender and ethnicities. The results of the present study may not be representative of school professionals' likelihood to recognize or refer for all kinds of child mental illness in children of various gender and ethnic identities. It is also important to note that all participants were self-selected and may include a disproportionate number of school professionals who have a specific interest in child mental health, which may not adequately represent all or most school

professionals in the United States. Additionally, the data collected was exclusively self-reported and was provided on an online survey. Consequently, the information provided by participants (e.g., occupation, years of experience, response to student behavior) could not be confirmed by actual behaviors or additional records. Self-report measures are also vulnerable to socially desirable responses, which may be particularly implicated when referencing typically sensitive topics like race, gender, and at-work behaviors.

Future Research

The findings of this study help to indicate which factors influence teachers' responses to students with emotional and behavioral concerns. Ultimately, the aim of this research is to aid in the development of interventions that will facilitate engagement in child mental health services when it is needed. In order to fully address this goal, it will be necessary to continue investigating the best way to support teachers in their role of supporting student well-being.

It is likely that continuing education about child mental health would be beneficial in supporting teachers' ability to recognize and refer children who are in need of services. However, the results of the present research suggest that teachers are already able to notice symptoms of mental illness when given the opportunity to examine the symptoms closely, without distraction, and when symptoms are straightforward and without comorbidities. Future research should focus on the factors that influence teachers' recognition and referral of students with mental health issues in a naturalistic setting. Such research may involve assessment of actual students' symptoms and teachers' actual behaviors in response to the students' clinical

presentations, which often include symptoms of multiple diagnoses. Additionally, a greater emphasis on the types of support teachers currently receive from their colleagues (e.g., consultation, team meetings) and administration (e.g., facilitation of student services in and out of the classroom) would be quite informative. Prior research has indicated that teachers are uncomfortable with identifying students in need, which may prevent them from initiating the process for a student to receive specialized services. Future research may focus on environmental characteristics within the school that facilitate teacher recognition and referral of student mental health concerns. Eventually, this line of research may result in interventions which integrate education about child mental illness with a focus on fostering a team approach to students' mental health in schools. It will be important for future research to include a larger, more diverse sample of school professionals in order to enhance generalizability of the results. It would also be advantageous to consider any regional or district-level differences among teachers' referral behaviors to better understand all of the factors at play.

The consideration of regional differences is particularly important when investigating the impact of racial and gender biases, as the expression of such biases may vary by location. Continued research in this area may focus more on identifying implicit biases that may influence teacher behaviors within different regions and districts, particularly when in stressful situations. Such research would be essential in developing interventions for teachers and other school personnel in order to help them support students independent of any underlying biases, if found.

Conclusion

The gap between the number of children coping with symptoms of mental illness and those who receive mental health services is concerning, particularly when factoring in the potential outcomes of unmet mental health care needs. Teachers play an important role in reducing this gap since they are well-educated about child development and are in a position to take notice of behaviors that are not developmentally typical or are a change for an individual student. The current study offers an exploration of the factors that may influence teachers' recognition and referral intentions for children exhibiting symptoms of ADHD and GAD. This research represents one of few investigating the potential role of racial bias and mental health stigma on teachers' recognition and referral behaviors. Results indicated that teachers' responses to ADHD symptoms are influenced by clinically significant symptoms. With regard to GAD, teachers' recognition and referral intentions were influenced by clinical symptoms and general attitudes about child mental health. Overall, these results suggest that teachers are capable of identifying emotional and behavioral problems in students based on the student's presentation alone. While inconsistent with much of the existing literature, the current findings highlight a need for continued research focusing on the factors that may influence teachers' behaviors in certain circumstances while not in others. Specifically, investigations of the variances in work environment, regional differences, as well as the assessment of implicit biases within the typical classroom setting is needed in order to better understand the ways in which mental health professionals can support school professionals in the goal of supporting the mental health of young students.

APPENDICES

Appendix A

DEMOGRAPHIC INFORMATION

We would like to know more about your background. Please complete the following sections as truthfully as possible.

1. What is your position or job title at your school?

2. How long have you held this position (in years)?

3. Age: _____

4. Gender: Male Female Other

5. Which of the following groups best describes your race?

- a. American Indian / Alaska Native
- b. Asian
- c. Black or African American
- d. Native Hawaiian or Other Pacific Islander
- e. White
- f. A group not listed here (Please specify: _____)

6. Which of the following groups best describes your ethnicity?

- a. Hispanic or Latino(a)
- b. Not Hispanic or Latino(a)

7. Have you ever attended a workshop or received training about child emotional and behavioral problems (e.g., depression or attention deficit hyperactivity disorder)?

Yes No

8. At your school, what resources are available to support the emotional and behavioral wellness of students?
- | | |
|-----------------------------------|----------------------------------|
| a. School psychologist | f. Group counseling |
| b. School counselor | g. More than one of the above |
| c. School social worker | h. None of the above |
| d. Response to Intervention (RTI) | i. Other (please specify: _____) |
| e. Individual counseling | |
9. Have you ever referred a student to any of the above resources (e.g., school psychologist, school social worker) before?
- Yes No
10. If yes, did you find it helpful?
- Yes No
11. If no, what has prevented you from referring students to any of these resources (e.g., school psychologist, school social worker)?
- | | |
|--|---|
| a. I have never had a student who needed any of these resources | d. These resources do not help |
| b. Parents/caregivers do not like it when teachers refer their children to such resources | e. I am unsure about how to utilize these resources |
| c. Other school administrators do not like it when teachers refer students to such resources | f. I have too many other things to do at work |
| | g. This is not part of my job description |
| | h. Other (please specify: _____) |

12. Do the resources and other professionals at your school provide you with the support that you need to do your best at your job?
- a. Not at all supportive
 - b. Slightly supportive
 - c. Somewhat supportive
 - d. Very supportive
 - e. Extremely supportive

13. Please explain your answer to the previous question.

Appendix B

ATTITUDES TOWARDS CHILD MENTAL HEALTH QUESTIONNAIRE (ACMHQ)

This section has two parts. In Part: 1, we will ask what you think MOST PEOPLE think about children with emotional and behavioral problems. Then in Part 2, we will ask you about what YOU think. When you see the word “children,” we mean both young children and teenagers. When we say “teenager,” we are talking about older children from the ages of 14 through 18. The words “emotional and behavioral problems” mean difficulties children might have with their feelings (such as sadness, fear, worry, anxiety, anger) or behavior (such as acting up, being hyper, overactive, misbehaving, poor attention, disobeying parents and teachers).

Part 1: What Other People Think

The following statements are about other people’s ideas, beliefs, and attitudes about children with emotional and behavioral problems. Circle the number that best reflects how much you agree or disagree with each statement.

<i>A lot of people think that ...</i>	Strongly Disagree	Disagree	Disagree a little	Agree a Little	Agree	Strongly Agree
1. A child with emotional and behavioral problems will do something violent to him/her self.	1	2	3	4	5	6
2. A child with emotional and behavioral problems will do something violent to other children.	1	2	3	4	5	6
3. A child with emotional and behavioral problems will achieve less in school than other children.	1	2	3	4	5	6
4. Children with emotional and behavioral problems are not as smart as other children.	1	2	3	4	5	6

<i>A lot of people think that ...</i>	Strongly Disagree	Disagree	Disagree a little	Agree a Little	Agree	Strongly Agree
5. Teenagers with emotional and behavioral problems are not good workers.	1	2	3	4	5	6
6. When children have problems with their emotions and behavior it is because their parents did not raise them properly.	1	2	3	4	5	6
7. Parents of children with emotional and behavioral problems are not good workers.	1	2	3	4	5	6
8. Families of children with emotional and behavioral problems make trouble (in the neighborhood, church, school).	1	2	3	4	5	6
9. Children with emotional and behavioral problems are trouble makers.	1	2	3	4	5	6
10. Children with emotional and behavioral problems should be discouraged from attending church.	1	2	3	4	5	6
11. Families of children with emotional and behavioral problems should be discouraged from attending church.	1	2	3	4	5	6

<i>A lot of people think that ...</i>	Strongly Disagree	Disagree	Disagree a little	Agree a Little	Agree	Strongly Agree
12. Children with emotional and behavioral problems will not be successful as adults.	1	2	3	4	5	6
13. Many children treat children with emotional and behavioral problems unfairly.	1	2	3	4	5	6
14. Many teachers would rather not have a child with emotional and behavioral problems in their classroom.	1	2	3	4	5	6
15. Many teachers do not want to deal with the parents of children who have emotional and behavioral problems.	1	2	3	4	5	6
16. Many teachers think less of parents of children with emotional and behavioral problems.	1	2	3	4	5	6
17. Many parents of children with emotional and behavioral problems are not fully accepted by their relatives.	1	2	3	4	5	6

<i>A lot of people think that ...</i>	Strongly Disagree	Disagree	Disagree a little	Agree a Little	Agree	Strongly Agree
18. Many relatives would not accept a child with emotional and behavioral problems.	1	2	3	4	5	6
19. Many relatives would exclude parents of a child with emotional or behavioral problems from family gatherings.	1	2	3	4	5	6
20. Many neighbors do not treat children with emotional and behavioral problems fairly.	1	2	3	4	5	6
21. Many neighbors treat families of children with emotional and behavioral problems unfairly.	1	2	3	4	5	6

Part 2: What You Think

The following statements are about ideas, beliefs, and attitudes *you* might have about children with emotional and behavioral problems. Circle the number that best reflects how much you agree or disagree with each statement.

	Strongly Disagree	Disagree	Disagree a little	Agree a Little	Agree	Strongly Agree
22. I would think less positively of a child with emotional and behavioral problems.	1	2	3	4	5	6

	Strongly Disagree	Disagree	Disagree a little	Agree a Little	Agree	Strongly Agree
23. It would be difficult for me to accept having a relative whose child has emotional and behavioral problems.	1	2	3	4	5	6
24. I would rather that relatives who have children with emotional and behavioral problems not attend family gatherings.	1	2	3	4	5	6
25. I would rather not have a child with emotional and behavioral problems in my child's classroom.	1	2	3	4	5	6
26. I would not want my child to be friends with a child who has emotional and behavioral problems.	1	2	3	4	5	6
27. I would not want a family who has a child with emotional and behavioral problems going to my church.	1	2	3	4	5	6
28. I would rather not have a teenager with emotional and behavioral problems as a co-worker.	1	2	3	4	5	6

	Strongly Disagree	Disagree	Disagree a little	Agree a Little	Agree	Strongly Agree
29. I would rather not have the parent of a child with emotional and behavioral problems as a co-worker.	1	2	3	4	5	6
30. If I were an employer, I would be reluctant to give a teenager with emotional and behavioral problems a job.	1	2	3	4	5	6

Appendix C

Vignette Questionnaire

Instructions: Imagine that the following vignettes describe students in your school. Please read each short student description and answer the questions that follow.

Diagnosable Vignettes

Matthew/Emma is a 10 year old African American/White American/Hispanic 5th grader who has always been a very good student and typically gets very good grades. Matthew/Emma has never missed a day of school and his/her mother says that (s)he would be so upset at even the thought of being late for anything. (S)He checks in with you frequently to be sure that (s)he is following directions and maintaining a good grade point average. Matthew/Emma gets very upset if (s)he gets answers wrong in class or on homework. At school, Matthew/Emma asks many questions about getting cancer or Ebola. You try to answer these questions honestly, but if you do not know an answer or attempt to change the subject, Matthew/Emma continues asking you or another teacher about becoming ill. Matthew/Emma also tells you that (s)he gets headaches and neck pains almost every day. Usually, you send him/her to the nurse's office for relief.

1. Does this student have an emotional or behavioral problem?
Yes No

2. Do you think that this student needs mental health services (e.g., some intervention by a counselor, psychologist, or social worker)?
Yes No

3. Would you follow the school-sanctioned procedure for referral to mental health services (e.g., some intervention by a counselor, psychologist, or social worker)?
Yes No

4. If yes, which professional or group of professionals would you contact (Please choose one)?
 - a. School psychologist
 - b. School social worker
 - c. School counselor
 - d. All of the above
 - e. Other (please specify: _____)

5. If no, what would prevent you from referring this student to a mental health services (e.g., some intervention by a counselor, psychologist, or social worker)?
 - a. The student does not need mental health services
 - b. It is not my responsibility
 - c. My school does not have these kinds of services available
 - d. The student's parents would not agree

- e. The referral process at my school is not effective
- f. Other (please specify: _____)
6. How much would you say the described behaviors interfere with the student's functioning in school?
- a. Not at all
- b. A little bit
- c. Somewhat
- d. Very much
7. Have you ever worked with a student like this?
- Yes No
8. If yes, what did you do in response to this behavior?
- a. Nothing
- b. Talked to the parents/caregivers
- c. Referred to the school mental health professionals (e.g., counselor, psychologist, or social worker)
- d. Referred to a different school professional (please specify: _____)
- e. Disciplinary action (e.g., sent to principal, suspension)
- f. Other (please specify: _____)

Matthew/Emma is an 11 year old African American/White American/Hispanic 6th grader who has so much energy and appears to be in constant motion throughout the day. (S)He tries to help out around the classroom and is often out of his/her seat. Matthew/Emma seems to be easily distracted and needs several reminders about what (s)he is supposed to be doing throughout the day. (S)He is typically enthusiastic about participating in class, as (s)he is constantly raising his/her hand or calling out answers. At times, Matthew/Emma needs to be reminded not to talk with the other students sitting nearby. Matthew/Emma works very hard on assignments, but frequently makes little mistakes which often impact his/her grade. Matthew/Emma often needs help finding assignments in his/her locker and ends up handing them in late or incomplete. Matthew/Emma seems to have a nice group of friends, but they have a hard time keeping up with Matthew's/Emma's energy level. You have overheard Matthew's/Emma's friends reminding him/her to calm down and they sound frustrated.

1. Does this student have an emotional or behavioral problem?
 Yes No

2. Do you think that this student needs mental health services (e.g., some intervention by a counselor, psychologist, or social worker)?
 Yes No

3. Would you follow the school-sanctioned procedure for referral to mental health services (e.g., some intervention by a counselor, psychologist, or social worker)?
 Yes No

4. If yes, which professional or group of professionals would you contact (Please choose one)?

<ol style="list-style-type: none"> a. School psychologist b. School social worker c. School counselor 	<ol style="list-style-type: none"> d. All of the above e. Other (please specify: _____)
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5. If no, what would prevent you from referring this student to a mental health services (e.g., some intervention by a counselor, psychologist, or social worker)?

<ol style="list-style-type: none"> a. The student does not need mental health services b. It is not my responsibility c. My school does not have these kinds of services available 	<ol style="list-style-type: none"> d. The student's parents would not agree e. The referral process at my school is not effective f. Other (please specify: _____)
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6. How much would you say the described behaviors interfere with the student's functioning in school?

- a. Not at all
- b. A little bit
- c. Somewhat
- d. Very much

7. Have you ever worked with a student like this?

Yes No

8. If yes, what did you do in response to this behavior?

- a. Nothing
- b. Talked to the parents/caregivers
- c. Referred to the school mental health professionals (e.g., counselor, psychologist, or social worker)
- d. Referred to a different school professional (please specify: _____)
- e. Disciplinary action (e.g., sent to principal, suspension)
- f. Other (please specify: _____)

Non-diagnosable Vignettes

Emily/Ryan is a 10 year old African American/White American/Hispanic 5th grader who has always been a very good student and typically gets very good grades. Emily/Ryan seems to love school and has only ever missed one day due to a stomach bug. (S)He always follows directions and is eager to help others in the class. Emily/Ryan gets a little upset if (s)he gets answers wrong on homework and asks for help to correct her mistakes. At school, Emily/Ryan asks many questions about health and science. You try to answer these questions honestly, but if you do not know an answer or attempt to change the subject, Emily/Ryan continues asking other teachers about various illnesses. Emily/Ryan also tells you that (s)he gets headaches from time to time. Usually, you send him/her to the nurse's office for relief.

1. Does this student have an emotional or behavioral problem?
Yes No

2. Do you think that this student needs mental health services (e.g., some intervention by a counselor, psychologist, or social worker)?
Yes No

3. Would you follow the school-sanctioned procedure for referral to mental health services (e.g., some intervention by a counselor, psychologist, or social worker)?
Yes No

4. If yes, which professional or group of professionals would you contact (Please choose one)?
 - a. School psychologist
 - b. School social worker
 - c. School counselor
 - d. All of the above
 - e. Other (please specify: _____)

5. If no, what would prevent you from referring this student to a mental health services (e.g., some intervention by a counselor, psychologist, or social worker)?
 - a. The student does not need mental health services
 - b. It is not my responsibility
 - c. My school does not have these kinds of services available
 - d. The student's parents would not agree
 - e. The referral process at my school is not effective
 - f. Other (please specify: _____)

6. How much would you say the described behaviors interfere with the student's functioning in school?
 - a. Not at all
 - b. A little bit
 - c. Somewhat
 - d. Very much

7. Have you ever worked with a student like this?
Yes No

8. If yes, what did you do in response to this behavior?

- a. Nothing
- b. Talked to the parents/caregivers
- c. Referred to the school mental health professionals (e.g., counselor, psychologist, or social worker)
- d. Referred to a different school professional (please specify: _____)
- e. Disciplinary action (e.g., sent to principal, suspension)
- f. Other (please specify: _____)

Emily/Ryan is an 11 year old African American/White American/Hispanic 6th grader who has so much energy and appears to be in constant motion throughout the day. (S)He often asks to help out around the classroom. (S)He is always enthusiastic about participating in class, as (s)he is constantly raising his/her hand to answer questions. Emily/Ryan seems very social and has many friends. At times, Emily/Ryan needs to be reminded not to talk with the other students sitting nearby. Emily/Ryan works very hard on assignments, but sometimes makes little mistakes. Although Emily's/Ryan's locker looks messy, (s)he proudly states that (s)he knows exactly where everything is located.

1. Does this student have an emotional or behavioral problem?
 Yes No

2. Do you think that this student needs mental health services (e.g., some intervention by a counselor, psychologist, or social worker)?
 Yes No

3. Would you follow the school-sanctioned procedure for referral to mental health services (e.g., some intervention by a counselor, psychologist, or social worker)?
 Yes No

4. If yes, which professional or group of professionals would you contact (Please choose one)?

a. School psychologist	d. All of the above
b. School social worker	e. Other (please specify: _____)
c. School counselor	

5. If no, what would prevent you from referring this student to a mental health services (e.g., some intervention by a counselor, psychologist, or social worker)?

a. The student does not need mental health services	d. The student's parents would not agree
b. It is not my responsibility	e. The referral process at my school is not effective
c. My school does not have these kinds of services available	f. Other (please specify: _____)

6. How much would you say the described behaviors interfere with the student's functioning in school?

a. Not at all	c. Somewhat
b. A little bit	d. Very much

7. Have you ever worked with a student like this?

Yes No

8. If yes, what did you do in response to this behavior?

- a. Nothing
- b. Talked to the parents/caregivers
- c. Referred to the school mental health professionals (e.g., counselor, psychologist, or social worker)
- d. Referred to a different school professional (please specify: _____)
- e. Disciplinary action (e.g., sent to principal, suspension)
- f. Other (please specify: _____)

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