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PREDICTING TEACHER REFERRAL OF PSYCHOPATHOLOGY IN STUDENTS: THE ROLE OF EXPERIENCE, KNOWLEDGE, AND GENDER

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PREDICTING TEACHER REFERRAL OF PSYCHOPATHOLOGY IN STUDENTS: THE ROLE OF EXPERIENCE, KNOWLEDGE, AND GENDER

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ABSTRACT

PREDICTING TEACHER REFERRAL OF PSYCHOPATHOLOGY IN STUDENTS: THE ROLE OF EXPERIENCE, KNOWLEDGE, AND GENDER

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Teachers are key players in recognizing mental health difficulties in their students and subsequently facilitating the referral to intervention process. However, the absence of a systematized approach leaves lingering doubt regarding accurate identification, rate of referral, and intervening factors, requiring a need to explore them further. Furthermore, to date, there is limited research examining teacher ability to recognize behavioral manifestations of trauma in their students. The current study surveyed primary and secondary teachers (n=54) across the United States. An anonymous survey presented a series of vignettes depicting behavioral representations of various childhood disorders. Teachers were asked to make a series of judgements about the behavior. The survey also included questions related to teachers' knowledge of and experience with psychopathology. A series of rank correlations were performed to explore the intervening factors in teacher diagnostic accuracy and subsequent likelihood to refer. Ostensibly, teachers are able to accurately identify a range of childhood disorders, although ratings for other disorders become spuriously inflated in the presence of specific problems and gender effects. Degree of concern for the behavior influenced rate of referral, and level of tolerability for the behavior influenced concern. The strength of this relationship was

stronger in females exhibiting externalizing behaviors. Understanding the circumstances that diminish teachers' accuracy in identifying at-risk behaviors and the factors implicated in referral may help ensure a timely and appropriate referral, and help improve student mental health outcomes.

DEDICATION

To my parents, Dr. Mark and Flora Brunswick

For your unwavering support across every life domain. Thank you for your continued investment in me so that I can give to others. Every person I help is on your merit.
I love you.

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I owe every success in this world to the Holy One, Blessed is He; through Whose kindness, I thrive. To the Almighty G-D, who has kept me alive, sustained me, and brought me to this moment.

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Chapter 1

Literature Review

Background

According to epidemiological data, 27.1% of children and adolescents in the United States have a diagnosed behavioral or emotional disorder, and prevalence rates have increased in recent years (The Centers for Disease Control and Prevention [CDC], 2019). Mental health problems affect children's ability to access the curriculum and participate in the school environment (Daniszewski, 2013; Whitley et al., 2013). Left untreated, students not only experience adverse mental health outcomes (Headley & Campbell, 2013), but also experience negative outcomes related to school engagement and achievement (Daniszewski, 2013).

Recent estimates indicate that 60% of adults in the United States have experienced at least one traumatic event throughout the course of their childhood (CDC, 2019), and traumatic exposure negatively affects psychological and classroom outcomes (Duplechain et al., 2008; Graham-Bermann et al., 2012; Levendosky et al., 2002; Saigh et al., 1997). As compared to their peers, traumatized youth demonstrate lower levels of scholastic achievement and higher levels of affective, social, behavioral, and cognitive problems in addition to trauma symptomatology (e.g., hyperarousal, re-experiencing, etc.) (Duplechain et al., 2008; Graham-Bermann et al., 2012; Levendosky et al., 2002; Saigh et al., 1997).

Given the prevalence and significant consequences of trauma and childhood disorders, early intervention is a critical step in treatment (Headley & Campbell, 2013) and schools are one of the major settings through which children receive mental health

services (Cunningham & Suldo, 2014). Moreover, schools may even be the ideal setting for intervention. Not only are they considered less stigmatizing than a hospital or a clinic, but children spend most of their day there and its structure allows for mental health to be assessed across multiple domains, such as scholastic achievement, peer interactions, and behavior (Daniszewski, 2013; Walter et al., 2006).

The Role of Teachers in Identification of Psychopathology

Within this setting, teachers are positioned as the first line of defense in early identification of need in their students and subsequent referral (Rothi et al., 2008; Whitley et al., 2013). Teachers are presumably appropriately positioned to act as the first level of screening because they are assumed to have experience with a wide variety of student behavior and therefore are suitably able to distinguish typical behavior from concerning behavior (Headley & Campbell, 2013).

Indeed, the most common way children receive mental health services within the school system is through referral by a member of the school-based team (Cunningham & Suldo, 2014; Papandrea & Winefield, 2011). These referrals usually occur through behavior rating scales and teacher nominations which are efficient and relatively low-cost methods of identifying at-risk students (Cunningham & Suldo, 2014**)**. These efforts aim to gather symptom-focused data in an attempt to identify students who are at risk for social-emotional difficulties, behavioral difficulties, and/or academic difficulties (Cunningham & Suldo, 2014). Indeed, schools often rely on these teacher nominations to systematically identify at-risk students based on the assumption that teachers are familiar with their students through their regular interactions (Cunningham & Suldo, 2014**)**. Thus, *appropriate* identification by school personnel is critical in this referral process.

Barriers to Identification of At-Risk Students

However, due to various barriers in the identification of at-risk students, many children do not receive treatment (Headley & Campbell, 2013). While the stigma that continues to surround mental health certainly delays early identification, subsequent referral, and access to treatment, lack of knowledge and skill to accurately identify at-risk children can also delay referral and adversely affect treatment outcomes (Headley & Campbell, 2013; Whitley et al., 2013). As teachers are a vital first step in the school referral process, correct perceptions of various social and emotional difficulties and the ability to accurately identify symptoms are crucial in ensuring appropriate referrals (Cunningham & Suldo, 2014; Soles et al., 2008).

Although teachers recognize the expectation upon them to act as gatekeepers to mental health referral, many feel unprepared to meet this expectancy and be able to appropriately identify mental health concerns in their students (Ekornes, 2015; Headley & Campbell, 2013; Papandrea & Winefield, 2011). Moreover, teachers note a disparity in their expected role and the level of training they receive (Daniszewski, 2013; Loades & Mastroyannopoulou, 2010; Papandrea & Winefield, 2011; Reinke et al., 2011; Rothi et al., 2008). While teachers acknowledge their duty of care for the mental well-being of their students and their role in identifying and alleviating barriers to the educational process, due to a lack of specialized training in psychopathology, they have limited ability to effectively act as frontline identifiers (Daniszewski, 2013; Loades & Mastroyannopoulou, 2010; Papandrea & Winefield, 2011; Reinke et al., 2011; Rothi et al., 2008).

Indeed, the majority of teachers reported receiving limited education in child mental health in their initial training (Daniszewski, 2013; Gowers et al., 2004; Papandrea & Winefield, 2011) and few report receiving sufficient in-service psychological training (Koller & Bertl, 2006; Walter et al., 2006). While teachers are required to take basic general and educational psychology classes during their initial training, these courses tend to be theory-based and are limited in their practical application as it applies to the mental well-being of students (Koller & Bertl, 2006). As a result, teachers do not receive proper preparation and training to understand the nature of mental health issues fully and lack the necessary knowledge, skill, and experience needed to work with students with mental health issues (Koller & Bertl, 2006).

Without appropriate knowledge of psychopathology in youth, teachers will not only be unable to recognize need in their students, but will be unable to facilitate ensuring that the student receives adequate support (Headley & Campbell, 2013; Loades & Mastroyannopoulou, 2010). Further, there is no systematic procedure for identifying at-risk children, and instead, referrals get made based on the knowledge of school personnel which varies by individual. Thus, accurate identification and referrals may be seen as fortuitous, rather than due to systematic efforts (Rothi et al., 2008).

Similarly, a further barrier to providing services is a lack of understanding and perception of the presenting problem because the definitions of social, emotional, and behavioral difficulties are not standardized. Thus, although a teacher may be able to recognize non-normative behavior, they may have difficulty distinguishing whether the concern is disciplinary, behavioral, emotional, or psychologically based (Headley & Campbell, 2013). Consequently, while teachers may be able to identify students who are

exhibiting difficulty within the classroom, if they cannot differentiate between these categories of difficulties and instead conceptualize the students as similar, then students may not receive the appropriate, differentiated services (Soles et al., 2008).

Referral Patterns for At-Risk Students

Overall, evidence as to whether teachers are in fact accurately able to identify psychopathology in their students is varied, although several referral patterns are evident. At times, teachers are able to recognize non-normative behavior in their pupils (Headley & Campbell, 2013), and sensitivity in detection appears to increase the more teachers spend time with their students throughout the day and with increased teacher perceived familiarity with their students (Auger, 2004; Cunningham & Suldo, 2014; Leff et al., 1999). Although they may be unable to pinpoint specific concerns about a child's mental health, their concerns are usually informed through multiple indicators of a child's functioning, such as behavioral observations, academic progression, and quality of peer relationships (Rothi et al., 2008).

Following identification of concern, many different factors affect a teacher's decision to then refer the child for intervention. While these factors usually include the availability of these intervention services as well as perceived support (Hinchliffe & Campbell, 2016), the literature suggests a broader teacher nomination bias in terms of problem type, such that type and the severity of the mental health problem have been shown to be the strongest predictors for referral. Much of the research suggests that teachers are more likely to nominate students with externalizing concerns as opposed to internalizing concerns (Cunningham & Suldo, 2014; Loades & Mastroyannopoulou, 2010; Papandrea & Winefield, 2011; Soles, et al., 2008). Indeed, research has

demonstrated that teachers endorsed competence in identifying externalizing concerns and their nominations are in fact effective in identifying externalizing concerns (Cunningham & Suldo, 2014).

Furthermore, teachers are more likely to rate externalizing behaviors as more concerning than internalizing behaviors regardless of actual problem severity (Cunningham & Suldo, 2014; Loades & Mastroyannopoulou, 2010). When presented with vignettes, teachers are able to distinguish the severity of symptomatology regardless of problem type. Nevertheless, concern was greater for children with behavioral disorders than emotional disorders (Loades & Mastroyannopoulou, 2010). Perhaps, children with blatant behavioral concerns are more likely to be referred due to their overt, visible nature. Indeed, externalizing symptoms tend to be disruptive and often violate classroom norms, making them easy for teachers to identify compared to internalizing concerns (Layne et al., 2006; Loades & Mastroyannopoulou, 2010; Papandrea & Winefield, 2011).

Compared to overt, disruptive manifestations of behavioral disorders, the research concerning internalizing disorders is more mixed, although overall, children with internalizing disorders are less likely to be identified, less likely to be referred, and thus less likely to receive treatment (Cunningham & Suldo, 2014; Papandrea & Winefield, 2011). Research conducted by Auger (2004) illustrated this and found that teachers had limited ability to successfully detect depression in their students, even among those students who self-endorsed high levels of depressive symptoms.

This discrepancy can perhaps be accounted for by general difficulty identifying the symptoms of an internalizing disorder due to its discrete nature (Papandrea & Winefield, 2011). Indeed, research has demonstrated that when teachers are successful in

identifying students with internalizing concerns such as anxiety, these identified overall anxious pupils also scored high on measures of separation anxiety, social anxiety, and physiological anxiety (Layne et al., 2006). Thus, teachers were better able to identify students with observable manifestations of their anxiety which supports the notion that behavioral concerns are more noticeable and more easily identified. Similarly, research conducted by Molins and Clopton (2002) demonstrated that when internalizing disorder symptom severity reached the threshold of noticeability, these children were as likely to be referred as children with externalizing concerns.

Differentiation of Identification of Non-Normative Behavior and Attribution of Symptomatology

Overall, while the literature reviewed above demonstrates that teachers are able to distinguish between children who exhibit externalizing concerns and those who do not, there is some evidence to suggest that teachers are unable to appropriately attribute such symptomatology to its proper disorder (Stevens & Quittner, 1998). Furthermore, Briesch et al., (2013), argue that reducing student mental health concerns into general classifications of internalizing and externalizing concerns mitigates identification of specific behaviors. As such, concerning behaviors may be broadly lumped into "behavior" or "conduct" problems without regard to specificity, intensity, and severity. Thus, behaviors such as general classroom disruption, truancy, and aggression may be conceptualized as similar, which interferes with the differentiation of intervention (Briesch et al., 2013).

Comorbidity

Moreover, this method represents a lack of a systematic approach in differentiating between different disorders and controlling for comorbidity (Kuhne et al.,1997). Indeed, Attention-Deficit/Hyperactivity Disorder (ADHD) frequently co-occurs with other disruptive behavioral disorders, affective disorders, or learning disorders. Furthermore, many of the distinctive symptoms of ADHD are also typical of these other disorders or even giftedness, and are thus often confused (Drabick, et al., 2007; Gresham, et al., 2000; Kim & Miklowitz, 2002; Kuhne et al., 1997; Leroux & Levitt-Perlman, 2000; Sciutto et al., 2000; Shaywitz & Shaywitz, 1991). Moreover, the literature suggests that while teachers are knowledgeable about the symptoms characteristic of ADHD, they do not differentiate the symptomatology typical of ADHD from other disruptive behavioral disorders, and as a result, many of the referrals for ADHD are perhaps better captured by another disorder (Kuhne et al., 1997; Sciutto et al., 2000; Stevens & Quittner, 1998).

While disruptive behavioral disorders often occur together, their symptomatology also overlaps. Specifically, aggression, irritability, impulsivity, difficulty with social relationships, and academic difficulty are all characteristic of ADHD, Conduct Disorder (CD), and Oppositional Defiant Disorder (ODD) (Kim & Miklowitz, 2002; Kuhne et al., 1997). Furthermore, recent estimates indicate that 60% of adults in the United States have experienced at least one traumatic event throughout the course of their childhood (CDC, 2019), and research has shown that Post-Traumatic Stress Disorder (PTSD) is also known to co-occur with behavioral disorders such as ADHD and CD (Saigh et al., 2002).

Moreover, traumatic exposure and PTSD in and of itself is known to be associated with various externalizing behaviors reminiscent of a behavioral disorder, such as inattention, irritability, aggression, defiance, and social problems (Graham-Bermann et al., 2012; Levendosky et al., 2002; Maschi et al., 2008; Perfect et al., 2016; Saigh et al., 2002). Thus, although traumatized children may demonstrate the same externalizing concerns characteristic of a behavioral disorder, the etiology of their problems is rooted in their traumatic exposure rather than a behavioral or developmental disorder (Graham-Bermann et al., 2012).

Halo Effects

Given the comorbidity and shared symptomatology of this class of behaviors, it is important to consider how a specific set of behaviors typical of one disorder influences teachers' perception and subsequent attribution of other behaviors, a process referred to as 'halo effect'. While this type of cognitive bias was initially used to describe the process in which people form global, favorable impressions of others in the presence of a desirable characteristic (Thordike, 1920), in their seminal article, Schachar et al., (1986) found evidence for an apparent negative "halo effect" in teachers' appraisal of student behavior. That is, "the presence of some particular behaviors affects ratings of phenomenologically different behaviors (Schachar et al.,1986, p. 332). Specifically, the research demonstrates that the presence of symptomatology typical of ADHD, ODD, and CD affected the accuracy of teachers' ratings (Abikoff et al., 1993; Jackson & King, 2004; Schachar et al., 1986; Steven & Quittner, 1998).

While teachers are able to accurately identify ADHD behaviors in children who presented typically, their ratings of ADHD-like behaviors become spuriously inflated

when a child demonstrates behavior typical of ODD (Abikoff et al., 1993; Steven & Quittner, 1998). As such, when a child exhibited opposition, but no inattention or hyperactivity, teachers did not rate the child as oppositional but rather rated the child as exhibiting significant hyperactivity. Similarly, Schachar and colleagues (1986) found that children with poor social relationships with peers and teachers, marked by defiance and aggression, were more likely to be rated as hyperactive and inattentive regardless of actual observed levels. Jackson and King (2004) found a bidirectional negative halo effect such that the presence of hyperactivity and inattention spuriously inflated teacher ratings of opposition, and oppositional behaviors increased the likelihood a teacher rated a pupil as having ADHD.

The Role of Knowledge and Experience

Furthermore, although the previously reviewed research demonstrated a lack of knowledge as a major barrier to accurate teacher identification of psychopathology in their students (Daniszewski, 2013; Gowers et al., 2004; Headley & Campbell, 2013; Loades & Mastroyannopoulou, 2010; Papandrea & Winefield, 2011), the actual role of knowledge and experience seems to be somewhat unclear. Indeed, other research has found that greater knowledge of, or experience with, a specific disorder does not necessarily improve rating accuracy and may in fact lead to over-identification. Indeed, research conducted by Steven and Quittner (1998) found that those teachers who are more knowledgeable of ADHD are more likely to interpret opposition as inattention and hyperactivity. Perhaps, in this case, increased knowledge becomes an obstacle as teachers may overgeneralize behavior to the disorder they are most familiar with, in effect

mitigating accurate identification of a host of childhood disorders with a sweeping diagnosis of ADHD.

Additionally, increased exposure and familiarity with a particular disorder seems to affect teachers' ratings of behavior in two different directions. On one hand, perhaps while increased exposure and familiarity with a problem behavior may sensitize teachers to the hallmarks of the disorder which would increase sensitivity in detection, it may also yield increased tolerance for behavior problems and result in less extreme ratings (Steven & Quittner, 1998). On the other hand, those teachers with less experience with disruptive behaviors are more likely to have a lower bandwidth for these behaviors, rating them as more extreme (Abikoff et al., 1993).

Gender-Based Expectations

Teacher bias with regard to student gender may also adversely impact the accuracy of identification (Jackson & King, 2004; Loades & Mastroyannopoulou, 2010; Soles et. al., 2008). Research has demonstrated that teachers are better able to recognize symptoms of externalizing disorders in males and symptoms of internalizing disorders in females (Loades & Mastroyannopoulou, 2010; Soles et al., 2008). Additionally, while girls are less likely to be identified as exhibiting externalizing behaviors than boys, when they are nominated, their symptoms are rated as more severe than their male peers (Soles et al., 2008). Soles et al., (2008) hypothesize that perhaps since externalizing behaviors are perceived to be more common in boys, when demonstrated in girls, they are seen as more extreme. Indeed, research has demonstrated that teachers can better identify emotional problems in girls than in boys and better able to identify behavioral disorders in boys than in girls perhaps because incidence rates are more common in each. Thus,

teachers may be more inclined to attribute symptoms accordingly (Loades & Mastroyannopoulou, 2010; Soles et al., 2008).

Gender-based expectations of behavior may further moderate accuracy in that teachers are more likely to rate oppositional boys as displaying greater ADHD than girls, and girls who exhibited hyperactivity and inattentiveness were more likely to be rated as oppositional than boys who exhibited the same levels of ADHD (Jackson & King, 2004).

Teacher Ability to Recognize Trauma in Their Students

While there is some research on school-related outcomes of traumatized youth and literature detailing the signs of traumatic exposure in an attempt to increase awareness in schools, research focusing on teachers' *ability* to recognize traumatized students appears to be much more limited. The majority of available research in this area seems restricted to child maltreatment identification, and study design centers around providing teachers with hypothetical maltreatment scenarios and asking teachers to judge whether they believe the given scenario constitutes maltreatment (Smith, 2010; Turbett & O'Toole, 1983; Walsh et al., 2008). As such, the extant research centers around teachers' ability to recognize abuse rather than identifying traumatized students.

While some research indicates that teachers do believe that trauma would have an adverse impact on classroom behavior (Gamache Martin et al., 2010; Yanowitz et al., 2003), there appears to be a dearth of available research that have examined this variable. Indeed, the present review was only able to locate a single line of research on this subject (Turbett & O'Toole, 1983) which posits that teachers do use students' behavioral changes to inform the judgements about whether abuse had occurred. Moreover, while teachers believe that abuse would affect children's behavior on domains of achievement, attention,

aggression, style of social interaction, self-esteem, and disruptive and internalizing behaviors (Gamache Martin et al., 2010; Yanowitz et al., 2003), teachers' ability to recognize traumatized children based on these observations alone has received very little research attention.

Furthermore, while some lines of research have found that children exposed to trauma were more likely to be rated as hyperactive or aggressive by their teachers (Briscoe-Smith & Hinshaw, 2006; Perfect et al., 2016; Schwartz & Gorman, 2003), the accuracy of these ratings and whether these children are subject to halo effects remains unclear. Indeed, whether traumatized children are subject to halo effects which may result in spuriously inflated ratings of externalizing behaviors is a variable that also seems to have received very little research attention. Additionally, as traumatic exposure is known to manifest as various externalizing behaviors (Graham-Bermann et al., 2012; Levendosky et al., 2002; Maschi,et al., 2008; Perfect et al., 2016; Saigh et al., 2002), in the presence of such behaviors, teachers' ability to discriminate between the cause for these behaviors, whether they are rooted in pathology or traumatic exposure, is also unknown.

Chapter 2

Statement of the Problem

Overall, while the literature is clear regarding the importance of a teacher in recognizing mental health difficulties in their students and subsequently facilitating the referral process, the absence of a systematized approach leaves lingering doubt regarding rate of referral and intervening factors, requiring a need to explore them further. Despite teachers being able to identify the presence of externalizing behaviors, there appears to be a limited amount of research as to whether teachers are able to accurately distinguish between this broad classification of behavior and accurately attribute these externalizing concerns to their appropriate etiologies.

Furthermore, there is limited research examining teachers' ability to recognize behavioral manifestations of trauma in their students. As is demonstrated in the extant research, accurate identification of the problem is a vital step in appropriate and differentiated intervention. However, research exploring the factors that contribute to accuracy is variable. Moreover, while the research is clear in noting the disparity in the expectancy placed upon teachers to identify mental health concerns in their students compared to the amount of mental health training they receive (Daniszewski, 2013; Loades & Mastroyannopoulou, 2010; Papandrea & Winefield, 2011; Reinke et al., 2011; Rothi et al., 2008), the role of knowledge and experience in facilitating the identification process is mixed (Abikoff et al., 1993; Steven & Quittner, 1998).

Perhaps this lack of adequate training in mental health creates a predicament where teachers are unable to differentiate between various categories of difficulties and thus, many referrals for a specific concern is better captured by another issue. While most

of the reviewed research in this area has focused on the interplay of halo effects between opposition, hyperactivity, inattention, and aggression, this research seeks to examine halo effects both in terms of these behaviors as well through the lens of trauma. Accordingly, while there is some research exploring the phenomenon of halo effects as it mitigates teachers' rating accuracy, more research is needed to understand under which circumstances these halo effects occur; whether teachers' ability to accurately identify at-risk students is diminished in the presence of a particular problem behavior or due to teachers' characteristics.

Chapter 3

Research Questions and Hypotheses

Research Questions

The purpose of the present researcher is to explore how teachers' ability to recognize symptoms of trauma and externalizing behaviors is impacted by various student and teacher factors and how conceptualization of problem behavior, as measured by ratings of intolerability and concern affects rate of referral to intervention services. Therefore, the aim of the researcher is to examine the degree to which variables such as teachers' knowledge and experience, student problem type and gender, and teachers' ratings of behavior tolerability and concern impact identification of symptom-driven behavior, halo effects, and referral likelihood.

Hypotheses

1. Several intervening factors with regard to accurately identifying at-risk children are hypothesized:
    a. Teachers' knowledge as measured by the amount of training they report that they have received will be predictive of accurately identifying symptomatology as measured by likelihood ratings.
        i. This relationship will be moderated by experience with students who carry these diagnoses as measured by the number of students with these disorders that they have taught and by student gender
    b. Given that traumatic exposure may manifest in various behaviors reminiscent of other classes of mental health concerns, accurate identification of PTSD is predicted to be poor.

i. Accurate identification of PTSD symptomatology will be moderated by teachers' knowledge as measured by amount of preservice and in-service training, and experience. That is, greater knowledge is predicted to increase teacher ability to accurately identify PTSD behaviors.

2. The problem behaviors which the teacher perceives to be most intolerable, as measured by a teacher's rating, will be subject to a halo effect.
    a. This relationship between intolerability and halo effects will be moderated by teachers' knowledge and experience and by student gender.
3. Ratings of concern for behavior and ratings of intolerability of behavior, as measured by a teacher's rating, are hypothesized to be the best predictors of referral to intervention services, as measured by a teacher's rating.
    a. Concern and intolerability ratings will be moderated by teachers' demographic factors such that increased self-reported knowledge and experience will increase concern ratings and decrease intolerability ratings.
    b. Gender and problem type will act as moderating variables such that that females exhibiting externalizing behaviors will elicit greater intolerability and concern than male counterparts, and males exhibiting internalizing concerns will elicit greater intolerability and concern than female counterparts.

Chapter 4

Method

Participants

Seventy-seven total participants were recruited via listservs and social media postings (Appendix A). Of the 77, seven were excluded from the study as four participants withdrew after consent and three did not meet the inclusion criteria of being a primary or secondary school teacher from the United States. Of the remaining 70 participants, 16 completed only the demographics portion. Of the remaining 54 participants, 10 submitted partial responses and 44 participants completed the study in its entirety.

Table 1

Demographic Characteristics of Teacher Sample

Demographic characteristic	Full Sample (n = 70)		Partial Responses (n = 54)		Complete Responses (n = 44)	
	n	%	*n*	%	*n*	%
Sex						
Female	55	78.6	41	76.0	33	2.3
Male	13	18.6	12	22.2	10	22.7
Not reported	2	2.9	1	1.9	1	2.8
Age (Years)						
18-24	4	5.7	2	3.7	2	4.6
25-34	28	40.0	21	38.9	17	38.6
35-44	17	24.3	12	22.2	10	22.7
45-54	16	22.9	15	27.8	11	25.0
55-64	5	7.1	4	7.4	4	9.1
State						
California	11	15.7	9	16.7	8	18.2
Colorado	1	1.4	0	0.0	0	0.0
Connecticut	2	2.9	1	1.9	1	2.8
Florida	1	1.4	1	1.9	1	2.8
Georgia	1	1.4	1	1.9	0	0.0
Illinois	3	4.3	2	3.7	2	4.6
Maryland	3	4.3	1	1.9	0	0.0
Massachusetts	5	7.1	4	7.4	3	6.8
New Jersey	3	4.3	2	3.7	1	2.3
New York	35	50.0	30	55.6	25	56.8
Virginia	2	2.9	1	1.9	1	2.3
Wisconsin	1	1.4	0	0.0	0	0.0
Not reported	2	2.9	2	3.7	2	4.6
Race						
Asian	4	5.7	4	7.4	4	9.1
Black	2	2.9	2	3.7	2	4.6
Hispanic/Latinx	1	1.4	1	1.9	1	2.3
Multiracial	2	2.9	1	1.9	0	0.0
White	56	80.0	43	79.6	34	77.3
Not Reported	5	7.1	3	5.6	3	6.8
Profession						
General education teacher	49	70.0	37	68.5	30	68.2
Special education teacher	15	21.4	14	25.9	12	27.3
Other	6	8.6	3	5.6	2	4.6

Education						
Bachelor's degree	13	18.6	6	11.1	5	11.4
Master's degree	50	71.4	42	77.8	34	77.3
Doctorate	4	5.7	3	5.6	3	6.8
Other	3	4.3	3	5.6	2	4.6
Teaching certification						
Yes	63	90.0	48	88.9	39	11.4
No	7	10.0	6	11.1	5	88.6
Time since certification (n = 63)			Time since certification (n = 48)		Time since certification (n = 39)	
1-5 years ago	18	28.6	11	22.9	10	25.6
5-10 years ago	13	20.6	9	18.8	6	15.4
10+ years ago	32	50.8	28	58.3	23	59.0
Place of employment						
Private school	13	18.6	10	18.5	7	15.9
Public school	55	78.6	43	79.6	36	81.8
Multiple settings	1	1.4	0	0.0	0	0.0
Other	1	1.4	1	1.9	1	2.3
Level Taught						
Elementary	10	14.3	5	9.2	4	9.1
Junior high/middle school	39	55.7	32	59.3	28	63.6
High school	14	20.0	12	22.2	9	20.5
Multilevel	6	8.6	4	7.4	2	4.5
Other	1	1.4	1	1.9	1	1.3

Measures

Clinical Vignettes

A total of nine vignettes (Appendix B) describing child behavior were developed for the current study based on adaptations from previously validated clinical vignettes and diagnostic criteria (American Psychiatric Association, 2013; Bell et al., 2013; Headley & Campbell, 2011; Kelly et al., 2006; Loades & Mastroyannopoulou, 2010; Pisecco et al., 2010). Five of the vignettes described one childhood behavioral disorder such as ADHD-Predominantly Inattentive Presentation, ADHD Predominantly

Hyperactive/Impulsive Presentation, ADHD- Combined Presentation, ODD, and CD. Two of the vignettes described one emotional behavioral disorder such as a depressive disorder and an anxiety disorder to serve as a comparison condition when examining identification ability or accuracy of teachers. One vignette described PTSD, and one vignette served as a control in which no symptomatology was present. Each vignette has two versions, one where the child described is a boy and one as a girl.

Demographics Questionnaire

Participants completed a demographic questionnaire (Appendix C) that included questions about their age, gender, ethnicity, number of years of teaching experience, whether they teach special or general education, and their perceived familiarity with behavioral and emotional concerns in children.

Procedure

Teachers who participated in the study were given the following instructions: "You will be presented with a series of vignettes describing school children of various ages. Your task is to read each vignette and complete the questions that follow." Each of the participants rated a vignette characteristic of each of the eight disorders and the control vignette. The order of the vignettes and the gender of the child depicted was randomized to prevent bias. Thus, each participant read a total of nine vignettes, in a random order, and had a 50% chance of being assigned to the male or female condition each time they were presented with a new vignette.

After reading each vignette, participants were presented with a list of various childhood disorders and were asked to rate on a Likert scale how confidently they felt the child in the vignette typifies each disorder from 1 (No chance of having the disorder) to 7

(Definitely has the disorder). Accurate identification was determined by whether the target disorder received a likelihood rating of above 4 and was also the highest rating. The presence of a halo effect was established if another disorder in addition to the target disorder both received a likelihood rating of above 4.

Participants were also asked to rate on a Likert scale the amount of concern they felt is warranted for this particular set of behaviors from 1 (None at all) to 6 (A great deal), and how tolerable they felt the behavior of the child depicted in the vignette is from 1 (Extremely intolerable) to 7 (Extremely tolerable). Participants were also asked to rate on a Likert scale how likely they were to refer this child for intervention services from 1 (Not likely at all) to 7 (Definitely).

Data Analysis

Survey data were cleaned and coded in Microsoft Excel (Version 16.16.27) and imported into IBM SPSS Statistics (Version 23) for statistical analysis. Teachers' responses regarding the number of children they taught with ADHD, Conduct Disorder, Oppositional Defiant Disorder, depression, anxiety, and Post-Traumatic Stress Disorder, and the number of children with these disorders who they had referred to treatment were not coded due to potential participant interpretation error. That is, review of the aggregate responses suggested that teachers had not understood the question and apparently reported the total number of children they taught and the *total* number of children they have ever referred for intervention, rather than the number of children they had taught and referred *per specific diagnosis*. As such, the endorsed responses did not accurately capture the true number of children with the various disorders each participant had taught and were thus excluded for analysis.

To determine whether various factors influence teachers' accurate recognition of a mental health problem and subsequent likelihood to refer, participant's Likert scale responses were treated as ordinal dependent variables (Kero & Lee, 2016; Norman, 2010) and a series of rank correlations were performed to explore the intervening factors in teachers' ability to accurately identify at-risk students and subsequent likelihood to refer.

Chapter 5

Results

Several intervening factors with regard to teachers' ability to accurately identify at-risk students were hypothesized. The results section will be subdivided into three subsections. The first subsection will analyze teacher accuracy in identifying at-risk behavior in students. The second subsection will evaluate halo effects. The third subsection will examine factors implicated in referral to intervention services.

Accuracy in Identifying At-Risk Students

Teacher Knowledge

To address the question of teachers' knowledge being predictive of accurate identification of at-risk students, a "knowledge" variable was created, producing a total score capturing the amount of knowledge teachers had related to each disorder. This score ranged from 0 (No Knowledge at All) to 13 (Very Advanced Knowledge) and was comprised of five variables: whether teachers recalled learning about each disorder, if they ever taught a child with that disorder, ever recommended treatment for that disorder, the number of articles/papers they had read regarding that disorder, and the number of workshops or in-service courses they attended that primarily focused on that disorder. Overall, teachers reported the greatest knowledge of ADHD (M = 5.3, SD = 3.2) and the least knowledge of Conduct Disorder (M = 1.19, SD = 2.49). Results are further outlined in Table 2 and Table 3.

Spearman's rank-order correlation analyses demonstrated that there was no significant relationship between experience and accurate identification for Conduct Disorder ($r(47) = .04$, $p = .782$), Oppositional Defiant Disorder ($r(47) = .14$, p = .324),

ADHD Combined ($r(47) = -.04$, $p = .769$), ADHD Hyperactive-Impulsive ($r(47) = -.03$, $p = .841$), ADHD Inattentive ($r(45) = .08$, $p = .582$), Depression ($r(48) = -.02$, $p = .907$), Anxiety ($r(47) = .07$, $p = .615$), and PTSD ($r(45) = .02$, $p = .922$) and teachers were accurate in identifying the target disorder regardless of how much self-reported knowledge they had. Indeed, teachers were able to identify children who were exhibiting behaviors typical of a Conduct Disorder with 93.9% accuracy, Oppositional Defiant Disorder with 97.9% accuracy, ADHD Combined Presentation with 97.9% accuracy, ADHD Predominantly Hyperactive-Impulsive Presentation with 100% accuracy, ADHD Predominantly Inattentive Presentation with 97.8% accuracy, depression with 100% accuracy, anxiety with 100% accuracy, and PTSD with 91.4% accuracy. Moreover, when presented with a vignette of a typically behaving child, the average teacher rating across disorders ranged from a 2.24 to a 3.52, below the threshold for indication of the presence of a disorder. That is, when presented with a vignette of a typically behaving child, teachers did not endorse the presence of symptomatology.

Table 2

Means, Standard Deviations, Medians, and Variances for Self-Reported Knowledge of Various Childhood Disorders

Disorder Knowledge					
	N	*M*	*SD*	*Mdn*	s^2
ADHD	54	5.30	3.20	4.50	10.21
Conduct Disorder	54	1.91	2.49	1.00	6.20
Oppositional Defiant Disorder	54	2.65	2.46	2.00	6.04
Depression	54	3.81	2.94	3.00	8.64
Anxiety	54	3.89	2.82	3.50	7.95
PTSD	54	2.96	2.01	3.00	4.07

Table 3

Frequency of Self-Reported Knowledge of Various Childhood Disorders

	ADHD		CD		ODD		Depression		Anxiety		PTSD	
Total Score	n	%	n	%	n	%	n	%	n	%	n	%
0	1	1.9	21	38.9	7	13	4	7.4	6	11.1	5	9.3
1	5	9.3	10	18.5	14	25.9	6	11.1	7	13.0	10	18.5
2	3	5.6	8	14.8	10	18.5	13	24.1	5	9.3	10	18.5
3	7	13.0	4	7.4	8	14.8	6	11.1	9	16.7	9	16.7
4	11	20.4	4	7.4	7	13.0	9	16.7	6	11.1	8	14.8
5	6	11.1	2	3.7	3	5.6	4	7.4	6	11.1	5	9.3
6	5	9.3	3	5.6	2	3.7	3	5.6	7	13.0	4	7.4
7	3	5.6	0	0.0	1	1.9	3	5.6	2	3.7	2	3.7
8	3	5.6	0	0.0	0	0.0	0	0.0	2	3.7	1	1.9
9	4	7.4	1	1.9	0	0.0	3	5.6	2	3.7	0	0.0
10	3	5.6	0	0.0	0	0.0	1	1.9	1	1.9	0	0.0
11	0	0.0	0	0.0	1	1.9	1	1.9	0	0.0	0	0.0
12	0	0.0	1	1.9	1	1.9	0	0.0	1	1.9	0	0.0
13	13	5.6	0	0.0	0	0.0	1	1.9	0	0.0	0	0.0

Teacher Experience and Gender of Child

While experience and gender of the child in the vignette was predicted to moderate the relationship between teachers' knowledge and accuracy of identification, examination of these interactions was not feasible for several reasons. Regarding teachers' experience, review of the aggregate responses suggests that teachers had not understood the question and apparently reported the total number of children they taught and the total number of children they have ever referred for intervention, rather than the number of children they had taught and referred per specific diagnosis. Further, review of the distribution of the data demonstrates a restricted range of responses, such that teachers were all highly accurate, and suggests that the distribution of data may not meet the assumptions of a moderation analysis (Norman, 2010).

Trauma

Given that traumatic exposure may manifest in various behaviors reminiscent of other classes of mental health concerns, accurate identification of PTSD was predicted to be poor. However, no support for this hypothesis was found as 91.4% of participants were accurate in identifying PTSD, and did not endorse any halo effects for other externalizing disorders [Conduct Disorder ($r(45) = -.279$, $p = .058$), Oppositional Defiant Disorder ($r(45) = -.231$, $p = .118$), or ADHD ($r(45) = -.189$, $p = .204$)] nor for internalizing disorders [Depression ($r(45) = -.121$, $p = .419$), Anxiety ($r(45) = .124$, $p = .406$). Similar to the above, moderation analyses related to accurate PTSD identification were unable to be completed due to participants misunderstanding the question they were asked and to distribution of the data.

Halo Effects

To address the question of halo effects, Spearman's rank-order correlation analyses demonstrated there was a significant positive correlation between teachers' ratings of Conduct Disorder and Oppositional Defiant Disorder ($r(46) = .47$, $p = .001$), such that when rating a vignette of a child demonstrating features of Conduct Disorder, teachers were also more likely to rate the child as also having Oppositional Defiant Disorder. This relationship was bidirectional as well ($r(47) = .42$, $p = .002$), such that when rating a vignette of a child demonstrating features of Oppositional Defiant Disorder, teachers were also more likely to rate the child as also having a Conduct Disorder.

Evidence for a unidirectional halo effect between depression and anxiety was found. Spearman's rank-order correlation analyses demonstrated there was a significant positive correlation between teachers' ratings of depression and anxiety ($r(48) = .33$, $p = .019$), such that when rating a vignette of a child demonstrating features of depression, teachers were also more likely to rate the child as also having anxiety. However, there was no halo effect when teachers read about an anxious child and rated them on depression ($r(47) = .08$, $p = .588$).

Tolerability Ratings

A negative correlation between the tolerability of a specific behavior and a halo effect was hypothesized, such that the less tolerable a teacher perceived a set of behaviors to be, the more likely they would rate a child on other disorders besides for the target disorder. In Oppositional Defiant Disorder, the less tolerable the teachers perceived the behavior to be, the higher their endorsement of ODD was ($r(47) = -.29$, $p = .025$),

however, ODD halo effects were not significantly affected by tolerability ($r(47) = -.13$, $p = .19$). Nevertheless, this relationship, although not statistically significant, is directionally negative which supports the argument that the less tolerable the behavior, the more likely they will rate the child highly on other disorders. As such, on this ODD vignette, there is a negative relationship where the lower the tolerability ratings for this set of behaviors are, the higher ratings for Conduct Disorder, which is in line with the hypothesis, but did not reach statistical significance ($r(47) = -.13$, $p = .19$). There was no significant relationship between tolerability ratings for Conduct Disorder and halo effects for Oppositional Defiant Disorder ($r(44) = -.22$, $p = .07$) or for tolerability ratings for depression and halo effects for anxiety ($r(46) = .21$, $p = .082$).

Moderation of Teacher Knowledge and Experience. Regarding the predicted moderation of teachers' knowledge, experience, and gender of the child in the vignette in the relationship between tolerability ratings and halo effects, as above, moderation analyses were unable to be completed due to participants misunderstanding the question they were asked and due to distribution of the data.

Moderation of Gender of the Child. However, other exploratory analyses do suggest some role of gender in the halo effects that were found such that when the total sample was separated by gender of child in the vignette, only the participants who received the female condition in the ODD and depression vignettes evidenced a halo effect. That is, participants who read about a girl demonstrating ODD were likely to rate her as having ODD *and* having CD ($r(27) = .5$, $p = .003$) and participants who read about a girl demonstrating depression were likely to rate her as having depression *and* having anxiety ($r(25) = .42$, $p = .015$).

Referral to Intervention

Concern

As far as factors related to likelihood in referral to intervention services as indicated by teacher likelihood ratings, Spearman's rank-order correlation analyses supported the hypothesis that level of concern for a set of behaviors is positively correlated with likelihood to refer for CD ($r(47) = .53$, $p < .001$, ODD ($r(48) = .29$, $p = .022$), ADHD Combined ($r(47) = .63$, $p < .001$), ADHD Hyperactive ($r(47) = .68$, $p < .001$), ADHD Inattentive ($r(43) = .52$, $p < .001$), depression ($r(48) = .64$, $p < .001$), anxiety ($r(47) = .59$, $p < .001$), and PTSD ($r(45) = .63$, $p < .001$) such that across all disorders, the more concern teachers endorsed for the behaviors, the more likely they were to refer for intervention services.

Tolerability

Further, support for the hypothesis that level of tolerability for a set of behaviors is negatively correlated with likelihood to refer was found for CD ($r(45) = -.35$, $p = .008$), ADHD Combined ($r(47) = -.33$, $p = .010$), ADHD Hyperactive ($r(45) = -.27$, $p = .034$), and ADHD Inattentive ($r(44) = -.25$, $p = .046$) meaning that as levels of tolerability for these behaviors decreased, teachers were more likely to refer. There were no significant associations between tolerability and likelihood to refer for ODD ($r(47) = .10$, $p = .251$), depression ($r(46) = .02$, $p = .442$), anxiety ($r(47) = -.05$, $p = .376$), or PTSD ($r(44) = -.07$, $p = .312$).

Moderation

Moderation of teachers' knowledge and experience in level of concern and tolerability was unable to be analyzed due to constraints of participant response style.

Similarly, while the distribution of the data did not allow for moderation analysis of gender and problem type on tolerability and concern, exploratory analyses did suggest that when considering the factor of gender, the relationship between problem type and levels of concern and tolerability differed among males and females. When the total sample was split by the gender of the child depicted in the vignette, the magnitude of the correlations of concern and tolerability demonstrated this difference for externalizing behaviors. Among participants who read about a girl demonstrating ODD, the less tolerable the behavior was, the greater the level of concern ($r(26) = -.562$, $p = .001$) and a magnitude larger than the correlation for boys demonstrating ODD behaviors ($r(19) = -.431$, $p = .026$). This supports the hypothesis that the less tolerable teachers believe the behavior to be, the higher the concern, and the strength of this relationship is stronger in girls compared to boys.

Table 4

Means and Standard Deviations for Accuracy of Identification of Target Problem, Degree of Concern, Degree of Tolerability, and Likelihood to Refer as a Function of Gender

	Accuracy				Concern[a]				Tolerability				Referral			
	Male		Female		Male		Female		Male		Female		Male		Female	
Vignette	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Conduct Disorder	6.2	0.9	6.1	1.0	5.5	0.8	5.7	0.5	2.3	1.7	2.7	2.1	6.6	0.7	6.8	0.7
ODD	6.4	0.7	6.3	0.9	5.9	0.4	5.8	0.4	1.7	1.2	2.0	2.0	7.0	0.0	7.0	0.2
ADHD Combined	6.7	1.0	6.4	1.3	4.4	1.0	5.0	1.1	4.5	1.7	3.6	1.8	6.0	0.9	6.2	0.8
ADHD Hyperactive	6.5	0.5	6.2	0.8	4.6	1.3	4.1	1.2	3.8	1.7	4.6	1.6	6.0	0.7	5.6	1.3
ADHD Inattentive	6.2	1.2	5.9	1.2	5.1	1.0	5.0	0.8	4.2	1.7	4.1	2.0	6.3	0.7	6.6	0.7
Depression	6.6	0.7	6.6	0.6	5.1	0.9	5.2	1.0	4.6	1.5	4.7	2.0	6.6	0.6	6.4	0.6
Anxiety	6.6	0.6	6.6	0.5	4.7	1.2	6.6	0.5	4.8	1.7	4.8	1.5	5.5	1.1	5.9	1.1
PTSD	6.2	1.4	6.2	1.0	5.6	0.6	5.6	0.6	4.6	0.5	3.8	2.2	6.8	0.5	6.8	0.5

Note. [a] This was evaluated on a Likert scale from 1(none at all) to 6 (a great deal)

Chapter 6

Discussion

The present study sought to understand teachers' ability to accurately distinguish between behavioral manifestations of psychopathology and attribute various collections of behaviors to their appropriate etiologies and to explore intervening factors. It also sought to examine rate of referral to intervention services.

The Role of Knowledge

While previous literature regarding the relationship between knowledge about childhood disorders and accurate identification is mixed (Abikoff et al., 1993; Steven & Quittner, 1998), results suggest that there was no association between teachers' prior knowledge and their ability to appropriately identify various childhood disorders in students. Moreover, more than three-quarters of teachers were able to correctly identify behavioral manifestations of PTSD although their accuracy was predicted to be poor due to the significant overlap in symptoms across various externalizing disorders (Graham-Bermann et al., 2012; Levendosky et al., 2002; Maschi et al., 2008; Perfect et al., 2016; Saigh et al., 2002). While teachers' ability to identify traumatized students based on behavioral observations alone and whether traumatized students are subject to halo effects has thus far received little research attention, this study found some evidence that teachers are able to recognize these students with good accuracy and do not spuriously inflate their ratings of other disorders, at least when presented with clinical vignettes.

Halo Effects

While previous literature demonstrated a halo effect between ADHD and ODD, no such relationship was found in the present study. However, participant ratings did

indicate the presence of a bidirectional halo effect between Conduct Disorder and Oppositional Defiant Disorder. Further, evidence for a unidirectional halo effect between depression and anxiety was also found, such that when rating a vignette of a child demonstrating features of depression, teachers were also more likely to rate the child as also having anxiety, but not the reverse. Perhaps, this unidirectional relationship can be explained in that anxiety is much more a clinical component of depression than depression is a component of an anxiety disorder (e.g. Major Depressive Disorder has an anxious distress specifier) and anxiety can be a component of a depressed presentation.

Referral to Intervention

Tolerability Ratings

It was predicted that the less tolerable a teacher perceived a set of behaviors to be, the more likely a halo effect would emerge. Although statistically significant support for this was not found, notable was the finding that amid ratings of ODD, teachers tended to endorse ratings for ODD more strongly as their level of tolerability for the behaviors decreased, and with decreased tolerability their ratings for CD increased, although not at the statistically significant level. Nonetheless, qualitatively, this directionally supports the argument that the less tolerable the behavior, the more likely teachers will endorse a halo effect. Due to limitations of the data, the extent to which teachers' knowledge, experience, and student gender moderates this relationship remains unclear. However, several results suggest that females were subject to halo effects in both externalizing and internalizing disorders.

Concern Ratings

Consistent with previous literature, concern for behavior was found to be a significant predictor in referral to intervention services, regardless of problem type. In comparison, level of tolerability was not as consistently correlated and a negative relationship between tolerability and referral was found for only Conduct Disorder and all three ADHD presentations. Due to data constrains, the extent to which teachers' knowledge and experience moderates the relationship between, concern, tolerability, and likelihood to refer is unknown, as is the relationship between gender, problem type, and tolerability and concern. However, several results suggest that the less tolerable teachers believe the behavior to be, the higher the concern, and the strength of this relationship is stronger in girls compared to boys. One reason for this may be that as a society we may be generally more accustomed to externalizing behaviors in boys which may mitigate concern.

Limitations of the Present Investigation

The present study has several limitations. Although recruitment took place over the course of a year, only 77 participants consented to take part in the study, and only 44 completed it in its entirety. The effect of the COVID-19 Pandemic on recruitment should be considered. Recruitment occured from Fall 2020 through Fall 2021, at a time when teachers were facing new challenges and demands leading to increased levels of stress and burnout (Pressley, 2021). Therefore, it is plausible that teachers simply lacked the available bandwidth to be willing to take part in additional tasks that did not immediately benefit them.

Part of the challenge with the collected data is that although the Likert responses ranged from one to seven, the actual endorsed responses were restricted to a few number of responses. Thus, while 7-point Likert scales can ordinarily be treated as continuous data and reliably used for parametric tests such as multiple regression regardless of sample size (Norman, 2010), looking at the actual responses received suggests that the data are perhaps more ordinal in nature, a better fit for nonparametric correlations (Kero & Lee, 2016), and tell the story better that way. Perhaps, it would have been more effective to qualify teacher accuracy in identifying at-risk students by giving the participants teacher report measures on the symptoms indicated in the vignettes. Such an approach would have yielded continuous variables that would have been easy to analyze in a regression analysis even with 40 or 50 participants. By using Likert responses as the dependent variable, a full spectrum of responses was needed.

Moreover, the restricted range of responses may suggest that the vignettes were too easy. Indeed, the correlations demonstrated that teachers were accurate regardless of how much self-reported knowledge they had. While there was a large spread of amount of knowledge teachers reported, they were by and large fairly accurate suggesting that either the vignettes were too obvious or they underestimated their knowledge. Alternatively, perhaps teachers did not underestimate their knowledge. Rather, although they may have endorsed low knowledge as captured by the variables they were asked about, their actual knowledge may be better represented by incidental learning rather than the amount of courses they took, children they taught, etc.

Directions for Future Research

Another limitation of this study was that it utilized pre-validated vignettes which provided background information that teachers may not be privy to in a real-world classroom environment. Conceivably, teachers' accuracy may shift with observing discrete behaviors in real-time, rather than reading a vignette. Future studies may want to focus on providing behavioral descriptions that are readily observable in the classroom setting only. Moreover, future research may consider including parent perspective of their child's functioning in teachers' judgements regarding whether the child is in need of intervention. As mentioned, teachers may not be apprised of the broader context in which the behavior is occurring, and future studies should consider exploring how teachers may leverage parent perspective and a child's broader environment in their conceptualization of a student's behaviors.

Similarly, another avenue of exploration may center on asking teachers what other possible explanations for non-typical classroom behaviors might be, beyond psychopathologic etiologies. As the previous literature indicates that teachers' concerns are usually informed through multiple indicators of a child's functioning, such as behavioral observations, academic progression, and quality of peer relationships (Rothi et al., 2008), it would be interesting to discover whether teachers can extrapolate to multiple causes as well.

Additionally, as the present study found evidence for level of concern and intolerability to be positively correlated with referral to intervention services, it would be interesting to explore in greater detail the extent to which teacher and student characteristics influence these ratings. Specifically, future studies should expand to

gathering the socioeconomic status of teachers' place of employment by asking them to provide the zip code of their school. Perhaps the socioeconomic differences of the school district in which teachers are based may influence their tolerance and/or concern for problematic behaviors, largely as a factor of their day-to-day exposure. In a similar vein, yet another avenue for exploration may center around manipulating the ethnic/racial background of the student depicted in the vignette, as it is crucial that we understand how these variables affect children's access to treatment.

Finally, it would also be interesting to explore the extent to which differences exist between primary versus secondary teachers and special education versus general education teachers.

Chapter 7

Implications for Practice

The results of the current study are important for the practice of school psychology. One of the primary reasons for this study's significance is that it highlights the importance of the multidisciplinary approach in school mental health. Overall, the literature is clear regarding the importance of a teacher in recognizing mental health difficulties in their students and subsequently facilitating the referral process. While it is important to note that teachers are not diagnosticians and lack the appropriate training to cluster symptoms together and assign a diagnosis, their ability to accurately recognize the students who are exhibiting non-normative behavior and identify the etiology that is driving these symptoms becomes significant because it is their initial referral that often influences the type of intervention the child receives.

Furthermore, accurate identification is important in ensuring the student receives timely, differentiated services, and it does not waste the school psychologist's time when referrals are better captured by another disorder or when the child is typically behaving and is not in need of intervention at all. While a number of variables certainly mitigates accuracy, what is clear is that referral to intervention services is strongly correlated with level of self-reported concern for these non-normative behaviors. While the present research illustrated that overall knowledge was not poor, knowledge does not appear to be instrumental in improving accuracy. However, the present data constrains did not allow to examine the extent to which knowledge mitigates concern. Nevertheless, it is important to acknowledge that, according to the present research, concern for the students' behavior *did* prompt teachers' referral. As such, future efforts should focus on

effectively leveraging this concern. Thus, training should center on highlighting the negative sequelae of these various childhood disorders to prompt referral for the non-normative behavior itself.

Lastly, this study is important to the practice of school psychology because it provides insight into the way teachers conceptualize their students' behaviors. The study revealed that the presence of some particular set of behaviors can affect ratings of another type of behaviors. While teachers did possess knowledge of psychopathology, perhaps future training should focus on preparing them adequately to encounter these types of cognitive biases. Training models may want to consider incorporating more explicit instruction on halo effects and the circumstances under which they are likely to occur.

Appendix A

List of Social Media Pages and Listservs Used for Recruitment

- California Teachers Empowerment Network
- East Side Middle School
- Free Teacher Resources
- Kew Gardens Hills
- Long Island Teacher
- Maimonides School
- Middle School Teachers Rock!
- NYS Teachers
- The Research Survey Exchange Group
- Scarsdale Union Free Schools
- SEN Teaching Ideas, Resources & Support
- Special Education Teachers
- Stern College Alumni
- Stern College: In the Know
- Talented and Treasured Teachers
- TEACHERS
- Teachers/Education People
- Teachers of New York City
- Teachers Resources, Teaching Tips, Teaching Articles
- Teachers- Sharing Ideas and Resources for the Classroom!

- Texas Teachers' Lounge
- Torah High Schools of San Diego
- Upper Elementary Teachers

Appendix B

Clinical Vignettes

Conduct Disorder (Kelly et al., 2006).

Bob/Beatrice is a 16-year-old student in your class but you do not know him/her well as he/she is rarely in class. You have heard that he/she has been cutting class since middle school and is usually hanging out at the mall playing video games with friends. He/she got into a lot of trouble last year for lighting fires in the bins at school. Bob/Beatrice does not have many friends at school as he/she can be very unpleasant to be around and often gets into fights with people, both in and out of school. Just recently, Bob/Beatrice broke into a storeroom in the school and broke all the windows. He/she got away with some expensive sports equipment which he/she has since sold. Bob/Beatrice is an only child. His/her parents are divorced and share joint custody. Each independently report that they tried to discipline him/her but it does not work as he/she does not seem to care what anyone thinks.

Oppositional Defiant Disorder (Loades & Mastroyannopoulou, 2010).

Heath/Hailey is an 8-year-old student in the third grade. He/she lives with his/her mother, father, and three siblings and is often disobedient at home and school. He/she never seems to feel guilty after misbehaving. He/she frequently destroys his/her things, and steals, and has run away from home at least six times. He/she regularly gets into fights and seems to only hang around children who get into trouble. He/she has physically attacked others twice his/her size. Heath/Hailey argues with everyone. He/she does not get along with his/her siblings or any of the children in the neighborhood. He/she is mean

and cheats whenever he/she plays with them. He/she is always swearing, having temper tantrums, and threatening people. Heath/Hailey frequently destroys his/her classmates' belongings. He/she also breaks articles of furniture in the home and other things that do not belong to him/her. He/she is mostly irritable and stubborn.

ADHD–Combined Presentation (Pisecco et al., 2010).

Justin/Jocelyn is a 9- year-old student who has a long history of being easily distracted by extraneous stimuli, has problems keeping his/her attention focused, fails to pay attention to details, and makes careless mistakes in his/her school work. In addition, Justin/Jocelyn has a tendency to blurt out answers before questions have been completed, has a difficult time waiting his/her turn, and often interrupts others. Compounding these problems is the fact that Justin/Jocelyn often forgets to complete daily activities and loses things necessary for various assignments (e.g., pencils, books, homework, etc.). Also problematic is his/her tendency to disrupt the class by leaving his/her seat at inappropriate times. In one-to-one situations, Justin/Jocelyn can be frustrating to work with because he/she often does not seem to listen when spoken to directly and has a difficult time organizing himself/herself in tasks and activities. Justin/Jocelyn also seems to always be "on the go," frequently fidgets, and talks excessively. His/her mother reports that Justin/Jocelyn also has these problems at home and has been like this since before he/she started school.

ADHD–Predominantly Hyperactive–Impulsive Presentation (Pisecco et al., 2010).

Isaac/Isabella is a 9-year-old student in the fourth grade. He/she is the fifth of six children and lived with his/her parents and siblings in a major metropolitan city. In school, Isaac/Isabella always seems to be "on the go," frequently fidgets, and talks excessively.

In addition, Isaac/Isabella has a tendency to blurt out answers before questions have been completed, has a difficult time waiting his/her turn, and often interrupts others. Isaac/Isabella also disrupts the class by leaving his/her seat at inappropriate times. All of these behaviors seem to contribute to the difficulties that he/she has been experiencing at school. After discussing these problems with his/her mother, you discover that Isaac/Isabella also has these problems at home and has been like this since before he/she started school. However, Isaac/Isabella's mother does not feel his/her behavior is concerning in any way but rather attributed his/her behavior to "kids being kids" and feels he/she will grow out of it in a few years.

ADHD–Predominantly Inattentive Presentation (Pisecco et al., 2010).

Mason/Madeline is a 9-year-old student in the fourth grade. He/she lives with his/her mother and grandmother after his/her father was killed last year in a car accident. Mason/Madeline has a long history of being easily distracted by extraneous stimuli, has problems keeping his or her attention focused, fails to pay attention to details, and makes careless mistakes in his or her school work. In addition to being easily distracted, Mason/Madeline often forgets to complete daily activities and loses things necessary for various assignments (e.g., pencils, books, homework, etc.). Mason/Madeline can also be frustrating to work with in one-to-one situations because he/she often does not seem to listen when spoken to directly. It is believed that all of these characteristics contribute to his/her difficulties in organizing tasks and activities. After discussing these problems with his/her mother, you discover that Mason/Madeline also has these problems at home and has been like this since before he/she started school.

Post-Traumatic Stress Disorder (Bell et al., 2013).

Larry/Laura is an 8-year-old student in the second grade. His/her parents are currently going through a divorce and he/she lives with his/her mother. Over the last moth you notice a decline in Larry's/Laura's grades and he/she seems preoccupied in class and often seems lost when called upon to answer questions. When you attempt to discuss Larry's/Laura's lack of concentration and slipping grades with him/her, he/she appeared withdrawn and unemotional, stating only that he/she would "try harder." Over the next few weeks you also notice Larry/Laura sucking his/her thumb and laying his/her head on the desk as if he/she was napping. Larry/Laura has disclosed to you that he/she has witnessed his/her father and mother hit each other, and his/her father attempt to choke his/her mother. He/she also reported nightmares and inability to sleep from fear of nightmares, lack of appetite, and lingering anxiety and fear. Further, his/her friendships have become strained as he/she is often irritable and prone to angry outbursts even with seemingly little provocation.

Depressive Disorder (Kelly et al., 2006).

Kirk/Kayla is a 16-year-old student who is in 11th grade. He/she lives with his parents and twin brother. He/she is somewhat introverted in nature but nevertheless is very active at school and throughout the community. He/she is a member of the swim team and volunteers as a peer mentor in his/her local community center. For the last four weeks, he/she has been feeling unusually sad. He/she has always loved playing guitar, but does not seem to care about it anymore and has not played in a while. He/she has lost quite a bit of weight because he/she is not eating properly. He/she seems to be finding it difficult to concentrate and make normal, day to day decisions. This is having an effect on her/her school work. He/she also seems to be very tired and run down. Friends, teachers and

his/her family are all concerned.

Anxiety Disorder (Headley & Campbell, 2011).

Brad/Betty is a shy 10-year-old in the fifth grade. He/she lives with his/her parents and two younger siblings. Brad/Betty appears to worry about tests and grades. He/she bites his/her nails and approaches the teacher's desk with several questions and complaints of 'tummy pains' just before a test is to begin. He/she often cries if he/she receives a poor grade or if he/she is criticized. Brad/Betty sometimes gets into arguments with peers over seemingly minor matters such as position in line. He/she excels at soccer and enjoys taking photographs of nature to post on his/her Instagram account. He/she very much wants to please his/her teacher and parents, and thus fears making mistakes and feels guilty when he/she does poorly. He/she often worries so much about his/her teachers' and parents' expectations that he/she feels he/she cannot breathe and will ask to stay home from school.

No Symptomatology (Loades & Mastroyannopoulou, 2010).

Paul/Paula is an 11-year old student who is in the sixth grade, whose parents have recently separated. Since he/she joined your class at the beginning of the year, he/she has never expressed undue concerns. He/she happily attends school, and has not been visibly distressed when his/her mother drops him off at school, although he/she was once upset when his/her father dropped him/her off. During the school day, he/she has only once complained of feeling unwell. Paul/Paula rarely requests permission to call either of his/her parents from school. He/she is sociable, and seems to make friends relatively easily, and was recently happy to go on a school trip involving spending a night away from home. Paul/Paula's parents report that he/she frequently fights with his/her siblings

and that these disagreements are usually resolved with little parental involvement. They report Paul/Paula is motivated to succeed at school as he/she wants to be a doctor when he/she grows up.

Appendix C

Demographics Questionnaire

What is your identified gender?
__Male
__Female
__Transexual male
__Transexual female
__Fluid
__Non-binary
__Other
__Do not wish to say

What is your age?
__18 - 24
__25 - 34
__35 - 44
__45 - 54
__55 - 64
__65 - 74
__75 - 84
__85 or older

In which country do you currently reside?

In which state do you currently reside?

Choose one or more races that you consider yourself to be:
__Caucasian
__African American
__American Indian or Alaskan Indian
__Asian
__Native Hawaiian or Other Pacific Islander
__Other (specify):_____
__Prefer not to respond

1. What is your profession?
   __General education teacher
   __Special education teacher
   __Other (specify):_____

2. What is your current educational level?

   __No High School

__Some High School
__GED Diploma
__High School Degree
__Some college
__Associates degree__
__Bachelor's degree
__Master's degree
__Doctorate
__Other (please, specify_____)

3. Did you receive a teaching certification?

4. If yes, when did you receive your teaching certification?
   __1-5 years ago
   __5-10 years ago
   __more than 10 years ago

5. Current place of employment:
   __Public school
   __Private school
   __Other (please, specify_____)

6. What level do you currently teach?
   __Elementary
   __Junior high/middle school
   __High school

7. (a)Have you ever taken a course in child psychological disorders?
   __Yes
   __No
   (b) If yes, do you recall learning about Attention-Deficit/Hyperactivity Disorder?
   __Yes
   __No
   (c) If yes, do you recall learning about Conduct Disorder?
   __Yes
   __No

(c) If yes, do you recall learning about Oppositional Defiant Disorder?
__Yes
__No
(d) If yes, do you recall learning about depressive disorders?
__Yes
__No
(e) If yes, do you recall learning about anxiety disorders?
__Yes
__No
(f) If yes, do you recall learning about Post-Traumatic Stress Disorder?

__Yes

__No

8. (a) Have you ever taught a child with Attention-Deficit/Hyperactivity Disorder?
   __Yes
   __No
   (b) If yes, how many children have you taught? Estimate #__

9. (a) Have you ever recommended treatment for a child with Attention-Deficit/Hyperactivity Disorder?
   __Yes
   __No
   (b) If yes, how many children have you recommended treatment for? Estimate #__

10. (a) Have you ever taught a child with a Conduct Disorder?
    __Yes
    __No
    (b) If yes, how many children have you taught? Estimate #__

11. (a) Have you ever recommended treatment for a child with a Conduct Disorder?
    __Yes
    __No
    (b) If yes, how many children have you recommended treatment for? Estimate #__

12. (a) Have you ever taught a child with Oppositional Defiant Disorder?
    __Yes
    __No
    (b) If yes, how many children have you taught? Estimate #__

13. (a) Have you ever recommended treatment for a child with Oppositional Defiant Disorder?
    __Y
    __No
    (b) If yes, how many children have you recommended treatment for? Estimate #__

14. (a) Have you ever taught a child with a depressive disorder?
    __Yes
    __No
    (b) If yes, how many children have you taught? Estimate #__

15. (a) Have you ever recommended treatment for a child with a depressive disorder?
    __Yes
    __No
    (b) If yes, how many children have you recommended treatment for? Estimate #__

16. (a) Have you ever taught a child with an anxiety disorder?

__Yes
__No
(b) If yes, how many children have you taught? Estimate #__

17. (a) Have you ever recommended treatment for a child with an anxiety disorder?
    __Yes
    __No
    (b) If yes, how many children have you recommended treatment for? Estimate #__

18. (a) Have you ever taught a child with Post-Traumatic Stress Disorder?
    __Yes
    __No
    (b) If yes, how many children have you taught? Estimate #__

19. (a) Have you ever recommended treatment for a child with Post-Traumatic Stress Disorder?
    __Yes
    __No
    (b) If yes, how many children have you recommended treatment for? Estimate #__

20. Estimate the number of articles/papers you have read regarding Attention-Deficit/Hyperactivity Disorder:
    __0
    __1-2
    __3-4
    __5-6
    __7-9
    __10+

21. Estimate the number of articles/papers you have read regarding Conduct Disorder:
    __0
    __1-2
    __3-4
    __5-6
    __7-9
    __10+

22. Estimate the number of articles/papers you have read regarding Oppositional Defiant Disorder:
    __0
    __1-2
    __3-4
    __5-6
    __7-9
    __10+

23. Estimate the number of articles/papers you have read regarding depressive disorders:
__0
__1-2
__3-4
__5-6
__7-9
__10+

24. Estimate the number of articles/papers you have read regarding anxiety disorders:
__0
__1-2
__3-4
__5-6
__7-9
__10+

25. Estimate the number of articles/papers you have read regarding Post-Traumatic Stress Disorder:
__0
__1-2
__3-4
__5-6
__7-9
__10+

26. Estimate the number of workshops or in-service courses you have attended that primarily focused on Attention-Deficit/Hyperactivity Disorder:
__0
__1-2
__3-4
__5-6
__7-9
__10+

27. Estimate the number of workshops or in-service courses you have attended that primarily focused on Conduct Disorder:
__0
__1-2
__3-4
__5-6
__7-9
__10+

28. Estimate the number of workshops or in-service courses you have attended that primarily focused on Oppositional Defiant Disorder:
__0

__1-2
__3-4
__5-6
__7-9
__10+

29. Estimate the number of workshops or in-service courses you have attended that primarily focused on depressive disorders:
    __0
    __1-2
    __3-4
    __5-6
    __7-9
    __10+

30. Estimate the number of workshops or in-service courses you have attended that primarily focused on anxiety disorders:
    __0
    __1-2
    __3-4
    __5-6
    __7-9
    __10+

31. Estimate the number of workshops or in-service courses you have attended that primarily focused on Post-Traumatic Stress Disorder:
    __0
    __1-2
    __3-4
    __5-6
    __7-9
    __10+

32. How confident are you that you can effectively identify a child with Attention-Deficit/Hyperactivity Disorder?
    __1 Not confident at all
    __2
    __3
    __4 Neutral
    __5
    __6
    __7 Extremely confident

33. How confident are you that you can effectively identify a child with a Conduct Disorder?
    __1 Not confident at all
    __2

__3
__4 Neutral
__5
__6
__7 Extremely confident

34. How confident are you that you can effectively identify a child with Oppositional Defiant Disorder?
    __1 Not confident at all
    __2
    __3
    __4 Neutral
    __5
    __6
    __7 Extremely confident

35. How confident are you that you can effectively identify a child with a depressive disorder?
    __1 Not confident at all
    __2
    __3
    __4 Neutral
    __5
    __6
    __7 Extremely confident

36. How confident are you that you can effectively identify a child with an anxiety disorder?
    __1 Not confident at all
    __2
    __3
    __4 Neutral
    __5
    __6
    __7 Extremely confident

37. How confident are you that you can effectively identify a child with Post-Traumatic Stress Disorder?
    __1 Not confident at all
    __2
    __3
    __4 Neutral
    __5
    __6
    __7 Extremely confident

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