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EVALUATION PLANNING AND SPECIAL SERVICE ELIGIBILITY DECISIONS
OF SCHOOL PSYCHOLOGISTS: DIFFERENCES BY CHRONIC HEALTH
CONDITION AND IMPAIRMENT SEVERITY

A Dissertation

Submitted to the School of Education

Duquesne University

In partial fulfillment of the requirements for
the degree of Doctor of Philosophy

By

Maria Tina Benno

May 2023

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Maria Tina Benno

2023

EVALUATION PLANNING AND SPECIAL SERVICE ELIGIBILITY DECISIONS
OF SCHOOL PSYCHOLOGISTS: DIFFERENCES BY CHRONIC HEALTH
CONDITION AND IMPAIRMENT SEVERITY

By

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ABSTRACT

EVALUATION PLANNING AND SPECIAL SERVICE ELIGIBILITY DECISIONS OF SCHOOL PSYCHOLOGISTS: DIFFERENCES BY CHRONIC HEALTH CONDITION AND IMPAIRMENT SEVERITY

By

Maria Tina Benno

May 2023

Dissertation supervised by Ara J. Schmitt, Ph.D.

School psychologists are expert practitioners who are well-versed in conducting comprehensive psychoeducational evaluations to address a wide range of students' needs in schools. The increasing prevalence of pediatric chronic illnesses (CIs) and the presence of students with CIs attending school requires school psychologists to be knowledgeable of the educational and social-emotional impacts of CIs on students' functioning.

Moreover, organizations such as the American Psychological Association (APA) and National Association for School Psychologists (NASP) encourage school psychologists to demonstrate competency in understanding the influence of CIs on students' function in the classroom (APA, 1998; Schmitt et al., 2019). Comprehensive psychoeducational evaluations are necessary for students with CIs who demonstrate adverse educational

impacts. Specifically, these students should be considered for special service eligibility under the Individuals with Disabilities Education Act (IDEA) category of Other Health Impairment (OHI). It is not presently known whether school psychologists' understanding of CIs influences their decision-making in either planning psychoeducational evaluations or recommending special services afterward. This study presented school psychologists with a standardized case and asked them to both (1) develop a generic evaluation plan and (2) determine whether the case would meet eligibility for special services.

Standardized cases included students with varying degrees of impairment severity (either moderate or severe impairment) and one of two CIs commonly encountered in school-aged children (either epilepsy or sickle cell disease). Non-meaningful differences were present in the evaluation plans provided by the respondents in this study, as participants only offered 1-2 domains of functioning in their proposed evaluation plans. Also, most participants recommended formal special services under IDEA, specifically under the eligibility category of OHI. Differences existed in the rationale behind why school psychologists included certain domains of functioning in their evaluation plans and for their special service eligibility decisions, with Specific Learning Disability (SLD) being the second most frequently recommended category. Because each of the standardized cases was designed to meet eligibility criteria for OHI, respondents' decision to not recommend OHI is a potential area for future exploration. Differences in participant responses warrant further investigation into the various factors resulting in their decision-making process.

Keywords: evaluation planning, psychoeducational evaluations, school neuropsychology, pediatric chronic illnesses, epilepsy, sickle cell disease, decision-making, school psychology

DEDICATION

This dissertation is dedicated to all the practicing school psychologists who tirelessly work hard and balance increasingly demanding caseloads to provide ethical and effective services to students and families within their districts. Our students, educators, and school staff appreciate the expertise and kindness of their school psychologist(s) in providing comprehensive services every day. Additionally, thank you to all my school-based and clinic-based supervisors who have shown me what it means to be an effective clinician and psychologist. Your dedication to providing excellent supervision and mentoring me on my journey to becoming a psychologist has heavily influenced my clinical and scholarly interests. Lastly, I would like to dedicate this dissertation and my future work to the children and families who experience additional adversity and challenges in navigating the school environment due to their health-related illnesses.

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Chapter 1

Pediatric chronic illnesses (CI) are conditions that last one year or more and are debilitating across many areas of childhood functioning (CDC, 2021; Compas et al., 2017; Schilling, 2014). The presence of students with CI in American schools has never been greater as childhood rates of CI continue to rise, and children with CI are now more likely to attend school due to decreased mortality associated with some CIs (e.g., pediatric cancer) and more effective medical management of pediatric conditions (Compas et al., 2012). School psychologists are practitioners within the school environment who address psychoeducational implications of childhood disorders through assessment, consultation, and intervention activities. School psychologists should also be prepared to apply these types of skills to the educational manifestations of CIs to improve the functional outcomes of students with pediatric conditions (American Psychological Association [APA], 1998; National Association of School Psychologists [NASP], 2010; Schmitt et al., 2019).

Given their deep integration within school systems and involvement across all aspects of a student's psychoeducational care, school psychologists naturally engage in advocacy for the children in their school systems (NASP, 2020). Regarding their role in working with children with CI, school psychologists may advocate for students' educational needs, evaluate the efficacy of academic and behavioral interventions, and serve as the liaison between the school, home, and healthcare providers (Nabors et al., 2008; Power et al., 1995). In addition, school psychologists with pediatric competencies are better equipped to assess and evaluate students with CIs within the school environment. Organizations such as NASP and APA call for school psychologists to

become more knowledgeable regarding childhood illnesses and their corresponding effects upon psychoeducational functioning (APA, 1998; NASP, 2020; Schmitt et al., 2019).

Students with CIs are susceptible to neurocognitive, academic, behavioral, and social functioning difficulties (Benno et al., 2021; Compas et al., 2017; DuPaul et al., 2017; Harmann et al., 2020; Riccio et al., 2014; Wodrich et al., 2020). Although, the specific functional deficits that manifest may vary by the biological nature of the condition. For example, epilepsy is a primary neurological disease (Centers for Disease Control [CDC], 2020, August 17), whereas sickle cell disease (SCD) is a hematological disease (CDC, 2020, December 14) that may result in secondary-neurological effects. Also, essential to recognize is that the disease course, illness severity, and side effects of medications may also influence the type and degree of functional deficits that may manifest from a CI (Lemanek et al., 2017; Modi et al., 2017). Taking these facts together, children with CI are intuitively at risk for more significant psychoeducational deficits without intensive school-based supports in place.

Specific to the two CIs that will be discussed more in-depth in subsequent sections are the implications of the current literature regarding how children with epilepsy and SCD are impacted by their illness. Children with epilepsy are at an increased risk for a variety of cognitive (McGeehan, 2018; Salinas et al., 2018; Schraegle & Titus, 2016), academic (Jones, 2010; Lasser, 1993), and behavioral difficulties within the school environment (Lasser, 1993; Modi et al., 2017). Similarly, children with SCD experience an increased risk for such deficits across these areas of functioning (Ghafuri et al., 2019; Harmann et al., 2020).

School psychologists should engage in holistic and comprehensive evaluation procedures to determine their eligibility for school-based services (Sadeh & Sullivan, 2017). This notion also applies to when school psychologists evaluate students with CI. Interestingly, unknown is whether evaluation and decision-making practices differ based upon school psychologists' understanding of CIs and symptom implications for functioning within the school environment.

Students with SCD may not receive special education services due to barriers in understanding the functional impact of their illness in school (Epping et al., 2012). In illustration of this, although children with SCD may demonstrate weaknesses in their performance on cognitive and achievement measures, studies have found that very few such students received services through an Individualized Educational Plan (IEP; Petersen et al., 2005). In contrast, other findings have suggested that students with epilepsy tend to qualify for school-based services due to the adverse educational impact of their illness (Wodrich et al., 2006). Even so, the students with epilepsy mentioned in Wodrich and colleagues (2006) appeared to have qualified for special education services under categories that did not best suit their needs. Understanding these disparities and the reasons for them in service-eligibility is essential, both ethically and pragmatically, in school psychological practice.

Considering the psychoeducational consequences of CIs are critically important in assisting school psychologists with evaluation planning and eligibility determination in school. By understanding the impact of pediatric CIs upon student's functioning within the school environment, school psychologists may determine whether students with CIs are eligible to receive various school-based services. Of note, to determine the eligibility

of school-based services for students with CIs, school psychologists should consider the adverse educational impact these students may encounter due to their CIs and correspondingly refer to special education law, the Individuals with Disabilities Act (IDEA, 2004), to determine their eligibility for special education services.

IDEA guarantees access to free and appropriate education in the least restrictive environment to any child with a disability (IDEA, 2004). Typically, school psychologists determine the eligibility of school-based services for students with CIs under the IDEA category of Other Health Impairment (OHI) or under a Section 504 Plan (Wodrich et al., 2006; Zirkel, 2020). A student who has a medical or health-related impairment that impacts their educational performance may qualify under the category of OHI for special education services. If students are ineligible for services under OHI because their condition does not adversely impact their functioning, they may qualify for services under a Section 504 Plan. Students are eligible for services under a Section 504 Plan if they have a physical or mental impairment that substantially limits one or more major life activities (Zirkel, 2020).

Decision Making

In reviewing information regarding pediatric CIs, special education law, and eligibility of services, it is also helpful to understand the team decision-making process, which includes school psychologists, related to the eligibility decisions for students with CIs. There are numerous components to decision-making, from clinical reasoning (e.g., inductive and deductive reasoning) and judgment to utilizing cognitive strategies (e.g., heuristics) to aid in the processes mentioned above. Moreover, school psychologists are

required to consider all possible hypotheses related to a student's level of functioning before making eligibility decisions (Sadeh & Sullivan, 2017).

When conducting an evaluation to determine OHI or Section 504 eligibility, school psychologists can facilitate making fair eligibility decisions using multiple sources of information and assessment tools. School psychologists can better assist themselves in decision-making during the evaluation process by utilizing empirically established tools and frameworks such as the multi-trait approach to multifactored assessment and the multidomain, multimethod, and multisource matrix (e.g., RIOT/ICEL matrix; Christ & Aranas, 2014; Davidow & Levinson, 1993). Likewise, the premise of both frameworks is that school psychologists should use multiple methods to assess the referral concern for each student. These frameworks are related to the biopsychosocial (cultural) model (Engel, 1980; Henningsen, 2015) in that school psychologists should engage in a holistic consideration of all possible data to support their claims (Sadeh & Sullivan, 2017). Through detailed consideration of the biological (students' CI), psychological (neurocognitive and educational domains of functioning), and social/cultural (team-based decision making) factors impacting the assessment evaluation process, school psychologists can be better assured to make fair special service eligibility decisions.

Purpose

Although school psychologists are required to engage in comprehensive evaluation procedures when evaluating all students (IDEA, 2004; NASP, 2020), it may be challenging to understand the various domain areas implicated when addressing the impact of CI on school functioning. It is unclear from the current research whether school psychologists have a working knowledge of specific CIs and link psychoeducational

deficits to the illness (i.e., deficits are a manifestation of the chronic illness) versus neglect the impact of the CIs on psychoeducational functioning and conceptualize any learning problems as being attributed to an unrelated learning disorder. Moreover, the extant literature has not explored factors (e.g., type or severity of CI) that may influence OHI eligibility decisions made by school psychologists.

This study will first explore if school psychologist's evaluation plans differ in complexity by illness pathology. Namely, I seek to understand if evaluation plans for a primary neurologic disorder (i.e., epilepsy) will differ in complexity from a non-neurologic disorder (i.e., SCD). The complexity of school psychologists' evaluation plans will be examined by considering the number of assessment domains referenced by the school psychologists in their evaluation plan (e.g., processing speed, verbal reasoning/language, nonverbal reasoning/spatial skills, memory/learning, attention/executive functioning, motor, academic areas, social-emotional/behavior, and adaptive behavior). Second, this study will explore if the level of student impairment impacts the eligibility decisions of school psychologists and if illness pathology interacts with this decision-making. School psychologists will be presented with otherwise identical epilepsy and SCD case vignettes with varying levels of student impairment to determine if illness pathology interacts with impairment severity when making special service eligibility decisions. Lastly, this study will assess whether school psychologists accurately recommend special education services under the OHI designation regardless of illness pathology and severity of impairment. In doing so, this study will seek to understand whether school psychologists demonstrate an understanding, or lack thereof, of the psychoeducational outcomes related to pathologically different CIs.

Research Questions

Research Question 1. Do the evaluation plans of school psychologists differ in the number of domains assessed for a neurologically rooted versus a non-neurologically rooted disorder?

Hypothesis: School psychologists will list more assessment domains for the evaluation of a student with epilepsy than a student with SCD, despite similar neuropsychological domains being implicated.

Research Question 2. When provided with an ambiguous case, does the special service recommendation of school psychologists vary by disorder type (neurologically-rooted or non-neurologically-rooted disorder) and the severity of functional impairment?

Hypothesis 1: Main effects will be present for both conditions and students with severe impairments will be recommended for formal special service eligibility at higher rates than students with moderate impairments.

Hypothesis 2: An interaction effect will be present as students with epilepsy and severe impairment will be found to be eligible for formal special services at a higher rate than students with SCD and moderate impairment.

Hypothesis 3: An interaction effect will be present and students with SCD and moderate impairment will be found to be eligible a Section 504 Plan at a higher rate than students with epilepsy and severe impairment.

Research Question 3. Regardless of impairment severity, if a school psychologist participant recommends special education eligibility for a student with epilepsy or SCD, which IDEA eligibility category is most frequently recommended?

Hypothesis: School psychologists will be more likely to suggest special service eligibility under the category of OHI than any other eligibility category.

Research Question 4. Are school psychologists more likely to reference additional medical record information with regards to kids with epilepsy versus sickle cell disease?

Hypothesis: School psychologists will more likely reference additional medical record information with regards to kids with epilepsy more than those with sickle cell disease.

Summary

Pediatric CIs may be pervasive and debilitating to students who experience their effects. Given the increase of students with CIs attending school, it is within the purview of school psychologists to accommodate the needs of these students within the school environment. Specifically, the effects of various illnesses vary based on the illness severity, duration, and age of onset. Primary neurological illnesses, like epilepsy, have overt neurological effects that provide clear associations with psychoeducational impairments in school. Although other illnesses, like SCD, have psychoeducational sequelae associated with the disease, these may not be known to those within the school environment.

Through engaging in comprehensive evaluation procedures, gathering data to support multiple hypotheses, and advocating for their students with CI to the multidisciplinary teams (MDT), school psychologists may ensure that fair eligibility decisions are considered. Students with CIs like epilepsy and SCD, may incur adverse psychoeducational outcomes, which should qualify them for special education services

under the IDEA category of OHI. School psychologists, with their extensive training, have the necessary competencies to assess, evaluate, and accurately designate OHI services for students with CIs. However, current literature has not explored whether CI type and level of cognitive and academic impairment influences school psychologist's special service eligibility in OHI evaluation.

This study will explore school psychologists' OHI evaluation approach when presented with a case of a student with primary neurologic (epilepsy) illness or a student with non-neurologic illness (sickle cell disease). Secondly, this study will examine whether a student's level of impairment (e.g., as represented through cognitive and academic standardized scores) influences school psychologist OHI evaluation decisions. Lastly, this study will assess whether school psychologists accurately recommend special education services under the OHI designation regardless of illness pathology (e.g., neurologic vs. non-neurologic) and severity of illness psychoeducational impairment. An overview of the relevant literature is discussed in Chapter II.

Chapter 2

Pediatric school psychology is a specialty of psychology that strives to serve and promote the wellness of students across multiple systems of care. Such systems include collaboration across a child's home, school, community, and healthcare settings (Power & Bradley-Klug, 2014). School psychologists are practitioners who have the competencies required to provide services to students across systems of care. Identifying how pediatric psychologists differ from school psychologists may be beneficial to understanding the intersection of both fields to promote child health and wellness across systems of care.

School psychologists are deliberately trained to provide academic, social, behavioral, and emotional services to children and youth (NASP, 2020). School psychologists also work with parents, educators, and other professionals to promote positive and supportive environments for students to succeed academically and psychologically (NASP, 2020). Pediatric psychologists, instead, are experts in supporting the psychological health of children with medical conditions while collaborating with medical professionals and parents to treat such physical, behavioral, and emotional problems associated with medical conditions (Power et al., 1995). While school outcomes are of primary importance to school psychologists, they are traditionally secondary to pediatric psychologists (Power & Bradley-Klug, 2014).

Pediatric school psychology combines school psychologists' and pediatric psychologists' roles by examining health-related factors in promoting students' educational achievement. When referring to *pediatric* populations, the psychology practitioner's role expands to assessing, evaluating, and treating students with childhood

conditions whose disease, or treatment of disease, affects their functioning in school (Schmitt et al., 2019). Given the field's interdisciplinary nature, pediatric school psychologists collaborate across disciplines and promote integrated services for youth (Power & Bradley-Klug, 2014).

Power et al. (1995) described roles that school psychologists might play in pediatric practice when providing services to students with medical conditions. The first includes advocating for the educational needs of students with medical conditions. Advocacy may entail collaborating with providers, informing educational providers of the child's individual needs, and providing resources to assist them in their learning. Secondly, school psychologists are adept at evaluating the efficacy of interventions in educational settings. Using this skill, school psychologists can assess and determine the impact of medications on a child's behavioral and academic functioning. Thirdly, school psychologists can serve as liaisons between the school, home, and health clinics (Nabors et al., 2008). Using collaborative and consultation processes, school psychologists can frequently communicate with healthcare providers to implement appropriate school services to students with health conditions. Lastly, school psychologists can promote health programs in schools. Prevention programs such as nutrition education can be offered in school-wide settings to promote health, educate students regarding the positive impact of healthy eating, and develop sustainable health behaviors (Power & Bradley-Klug, 2014).

School psychologists are also responsible for coordinating services for students with CIs by educating other school personnel who care for this population. Although teachers are typically the first responders to students within the educational environment,

they are also dependent upon school psychologists to provide them with expertise in assisting students with CIs (Duggan et al., 2004). Notably, teachers are more comfortable addressing students' academic difficulties with CIs but not with equal facility the associated medical and social challenges (Nabors et al., 2008). Similarly, students with CIs may re-enter school after an absence due to illnesses. The transition from medical care to the school environment may also be a difficult bridge for school personnel in providing continuity of services across settings (Kliebenstein & Broome, 2000). School psychologists serve as the liaison between the school and other systems of care, including the child, family, and medical personnel, when students transition back to school and face daily school challenges. Moreover, it appears clear that school psychologists are adept in advocating for the most appropriate services for students with CIs within the school environment (Nabors et al., 2008).

The NASP (2020) model for comprehensive services suggests that school psychologists should integrate their knowledge of all domains of practice to deliver a comprehensive range of services to achieve outcomes across students, families, schools, and consumers of our services. Similarly, NASP and the APA jointly call for school psychologists to become knowledgeable about childhood illness and its effects upon psychoeducational functioning (American Psychological Association, 1998; NASP, 2020; Schmitt et al., 2019). Moreover, these organizations promote the notion that providing high-quality services to meet student's academic, behavioral, and social needs is within the purview of school psychological practice. School psychologists are adept at using the skills needed to coordinate services for students with complex medical and health needs. As an increasing number of students are experiencing academic and

behavioral difficulties due to their medical conditions (Schilling, 2014), school psychologists have the training, particularly in preventive and responsive services, to improve these students' school outcomes (Riccio et al., 2014).

Specific to addressing the psychoeducational challenges for students with medical conditions, it is crucial to approach the assessment and evaluation of this population while engaging in the biopsychosocial framework. Engel (1980) stated that: "Nothing exists in isolation. Whether a cell or a person, every system is influenced by the configuration of the systems in which each is a part, that is, by its environment. More precisely, neither the cell nor the person can be fully characterized as a dynamic system without characterizing the larger system(s) (environment) of which it is a part." (p. 537). Essentially, school psychologists must be cognizant of the various systems in which students function. More current discussions regarding the biopsychosocial framework advocate for the inclusion of cultural implications of disease in the discussion of patient care (Henningesen, 2015). This notion is relevant when discussing the implications of disease and CI, as certain illnesses and the treatment of illness across environments may disproportionately affect particular populations. Incorporating the biopsychosocial (cultural) model into school psychological practice can provide school psychologists with an adequate framework to refer to when evaluating students with CIs.

Pediatric Chronic Illness

Pediatric chronic illnesses are conditions that last one year or more, require continuous medical intervention, or limit activities of daily living, or both in students (CDC, 2021). In addition, pediatric CIs are conditions that impact students' academic, behavioral, and cognitive functioning (Compas et al., 2017; Schilling, 2014). Students

with CIs often require continued medical attention while balancing their school responsibilities (Compass et al., 2017). Moreover, students with chronic conditions may be prone to frequent absences and various psychoeducational problems (Barraclough & Macheck, 2010). Reasons for school absences include the time required to receive medical treatments, procedures that may require hospital stays, doctor's visits, and generally poor health. Psychoeducational sequelae resulting from factors related to CI may include cognitive, academic, and behavioral difficulties. Increased absences, behavioral and academic factors can also lead to social difficulties due to time away from school and reduced opportunities for students to socialize (Schilling, 2014). Given these broad considerations, school psychologists are vital as advocates for students with CIs and active participants in their care during school. As pediatric CI prevalence rates continue to increase (Brown, 2004; Riccio et al., 2014), school psychologists need to understand CIs, specific illness pathologies, and the resulting psychoeducational consequences to adequately form an evaluation plan to make special service eligibility decisions.

Given the wide range of pediatric CIs, another critical issue for school psychologists to understand includes the influence of disease course and treatment on a child's psychoeducational progress. Neurological conditions differ in disease presentation from non-neurologic conditions, such as epilepsy (neurologic) and sickle cell disease (SCD; non-neurologic; Lemanek et al., 2017; Modi et al., 2017). Neurologic diseases have an overt presentation of symptoms and known associations with academic and behavioral problems (Riccio et al., 2014). Although not a neurological disorder, diseases like sickle cell anemia may still have academic problems resulting from biological

aspects of the disease (Drotar et al., 2004; Lemanek et al., 2017). To understand these associations, school psychologists need to be cognizant of how learning problems result from individual aspects of diseases. Students with CIs have more lacking experience in school due to the specifics of their disease (Lum et al., 2017).

School psychologists typically examine a child's neurocognitive, academic, and social-emotional functioning during the psychoeducational evaluation process. As outlined in Miller and Maricle (2019), neurocognitive assessment areas include measurement of processing speed, verbal reasoning and language skills, nonverbal reasoning and spatial skills, memory and learning, attention and executive functioning, and motor skills. Academic areas include reading (e.g., basic reading, fluency, and comprehension), math (e.g., calculation, fluency, and reasoning), and writing (e.g., spelling and written expression). Social-emotional areas include a child's behaviors, social abilities, emotional abilities, and functional skills. By examining these areas, school psychologists engage in a comprehensive evaluation process (NASP, 2020).

Although school psychologists must engage in a comprehensive evaluation process for students with CIs, it may be challenging to understand the various domains implicated in each illness. As means of organization for the subsequent section of this chapter, included is a review of pediatric epilepsy and SCD, the psychoeducational implications of which should be considered by school psychologists and the school team when evaluating students with these conditions. Pediatric epilepsy and SCD were chosen for this study due to their varying pathology (e.g., neurologically rooted and non-neurologically rooted), which may impact the evaluation planning process for school psychologists.

Epilepsy

Pediatric epilepsy is a seizure disorder that is one of the most common neurological disorders (i.e., primarily brain-based condition) in children (CDC, 2020). Children with epilepsy are prone to seizure events that may occur and affect different brain areas based on seizure type (Modi et al., 2017). Aside from the physical manifestations of the disease, children with epilepsy also are prone to other psychological comorbidities that influence their functioning in school. Moreover, given the disease's complexity, children with epilepsy must adhere to a specific regimen of care such as consistently taking anti-epileptic medications, managing stress levels, practicing healthy sleep habits, and avoiding seizure triggers (Modi et al., 2017). Given these factors, students may have difficulty attending to their health while focusing on their schoolwork. Studies have shown that children with epilepsy suffer from neurocognitive implications associated with their illness. Moreover, the severity of cognitive impairment may depend on children's use of medications, their age of onset, and the disease's chronicity (Reuner et al., 2016).

Epileptic seizures are caused by excessive electrical activity in the brain (Lassner, 1993). Simply put, neurotransmitters within the brain are not in homeostasis, which results in the firing of electrical activity without proper regulation (McGeehan, 2018). Furthermore, there are two broad types of seizures: generalized and partial (focal) seizures, which result in such broad functional impairments. Generalized seizures result in the entire brain, whereas partial seizures result in a specific part of the brain (Lassner, 1993; McGeehan, 2018). Depending on the location of the electrical activity, a multitude of functional deficits may manifest.

There are various subtypes within the realm of generalized seizures: tonic-clonic, absence, and myoclonic (Kiriakopoulos & Shafer, 2017; Lassner, 1993). Tonic-clonic, or grand-mal, seizures involve fits and a loss of consciousness. Absence seizures, or petit-mal, involve staring, changes in facial expressions, and loss of awareness. Myoclonic seizures involve muscle spasms that may cause the child to fall on the ground (Lassner, 1993). Behavioral presentation of generalized seizures involves a loss of bodily control that may not be as noticeable by individuals in the child's environment (Wodrich et al., 2020).

Partial seizure subtypes include simple-partial and complex-partial. Simple-partial seizures include sudden physical movements, but that does not impair the child's consciousness. Complex-partial seizures involve impairment of consciousness and physical/sensory impairments. As a whole, partial seizures may result in more specific motor movements and limited sensory and cognitive impairments, which in turn may result in less opportunity for easy identification by teachers and school staff (Wodrich et al., 2020).

Depending on the child's type of seizure, the psychosocial and behavioral implications may vary. However, as noted by Lasser (1993), the following are some characteristics that students with epilepsy may exhibit that can easily be identifiable in the school environment: "(1) loss of awareness and child failing to respond to attempt to gain attention, (2) confusion may occur at different periods of time, (3) the child's head may suddenly drop, (4) muscle tone will end immediately, (5) rapid blinking of eyes or the eyes may be rolling upwards, (6) blank expression may be present as well as movement of mouth or face, (7) child may be walking aimlessly accompanied by dazed

behavior, or other types of repetitive activity, (8) involuntary movements of legs or arms” (p. 7).

The psychoeducational profile of students with epilepsy varies based on epileptic disease course and severity. Commonly, children with different types of epilepsy will have overarching impairments in cognitive areas such as processing speed and working memory (McGeehan, 2018; Salinas et al., 2018; Schraegle & Titus, 2016). Furthermore, as McGeehan (2018) discussed, children with epilepsy may have a “Swiss cheese” presentation of epileptic disease in that some children may have average levels of functioning in certain neurocognitive domains but not in others. To illustrate, MacAllister and colleagues (2019) examined children’s and adolescents’ cognitive functioning with epilepsy. All children with epilepsy in this study performed significantly lower in all areas of neurocognitive functioning (e.g., verbal comprehension, fluid reasoning, working memory, processing speed, and overall intelligence). Working memory and processing speed were of particular concern for children with epilepsy in this study. Consistent with other research, children with epilepsy have pronounced deficits in memory processes. Moreover, the specific type of epileptic disease course (e.g., temporal lobe or frontal lobe epilepsy; focal or generalized) contributed to differences in memory performances (Salinas et al., 2018; Schraegle & Titus, 2016). Additionally, children with a longer duration of disease, earlier onset, frequency of seizures, and increased anti-epileptic medications have the most impact on cognitive functioning (MacAllister et al., 2019; Salinas et al., 2018; Schraegle & Titus, 2016). The use of anti-epileptic medications may also have implications on students’ levels of attention in school, which can encompass

deficits across many cognitive and academic areas (McGeehan, 2018; Wodrich et al., 2020).

Within academics, students with epilepsy may have difficulty across many areas of performance. Jones et al. (2010) compared achievement scores following a 2-year interval across students with epilepsy (complex partial seizures and childhood absence epilepsy) and healthy controls. Significant differences in reading, math, and spelling were present across students with epilepsy and healthy controls. Interestingly enough, students with epilepsy were stable in their performance across all domains over 2-years; however, they still scored significantly below their healthy peers. Students with epilepsy may have deficits in basic academic skills required to learn and progress as they continue in their education. Unfortunately, the inability to build on academic skills in basic reading, writing, and mathematics leads to higher complex challenges in education (Lasser, 1993).

Moreover, students with epilepsy had higher rates of behavior problems and psychiatric disorders. Unfortunately, these elevated rates of behavior difficulties persisted over time, including fatigue, sleep disturbances, and chronic irritability, which are also associated with various comorbid psychological disorders such as depression, anxiety, ADHD, and ODD (Modi et al., 2017). The higher prevalence of social, emotional, and behavioral disorders may be related to the impact of seizures on adequate brain development (McGeehan, 2018). Furthermore, students with epilepsy are at increased risk for self-esteem issues due to peer reaction to seizures and additional stress and anxiety related to their condition (Lasser, 1993).

Sickle-Cell Disease

Sickle cell disease (SCD) in children is related to an abnormality in hemoglobin (Hb), a protein that carries oxygen in red blood cells. Individuals with SCD have hemoglobin production that results in the red blood cells becoming oddly shaped (e.g., sickled), hard, and sticky, which results in red blood cells having difficulty passing through the vessels in the body and leading to numerous other health risks (Harmann et al., 2020; CDC, 2020). Moreover, this disease disproportionately affects African American and Hispanic American children at higher rates than children from other races (Harmann et al., 2020; Lemanek et al., 2017; National Heart Lung and Blood Institute [NHLBI], 2014). Depending on which type of sickle genes children inherit from their biological parents, the severity of their illness varies.

The different genotypic variations of sickle genes include HbSS, HbSC, HbSB β thalassemia, and HBSb β thalassemia. Of these four variations, HbSS is the most common type. HbSS & HbSB β thalassemia are referred to as sickle cell anemia, two of the most severe clinical manifestations of SCD. Another variation, or sickle cell trait, occurs when a person has only one sickle cell gene from a parent. People with sickle cell trait typically do not have SCD and only experience non-severe complications (Harman et al., 2020; NHLBI, 2014).

There are many symptoms that a child with SCD may exhibit that may be noticeable within the school environment. For instance, children with SCD may be at risk for anemia and pain (Wills et al., 2010). Anemia may result in students becoming increasingly fatigued and unable to participate in exercise (e.g., physical education classes or playing at recess). Moreover, evidence of pain may result in difficulties

sustaining attention and focus in the classroom (Harmann et al., 2020). Pain symptomatology may be spontaneous and exacerbated by cold, dehydration, emotional stress, or physical illness (Lemanek et al., 2017). Given this, children with SCD must stay hydrated throughout the day and avoid the effects of dehydration (Harmann et al., 2020).

School psychologists should be aware of the adverse psychoeducational outcomes that have been associated with SCD. Studies have shown children with SCD experience deficits in processing speed (Bills et al., 2019; Castro & Viana, 2018), verbal reasoning and language abilities, nonverbal reasoning, spatial abilities (Castro & Viana, 2018; Prussien et al., 2019), memory and learning (Brandling-Bennett et al., 2003), attention and executive functioning (Prussien et al., 2019), and motor skills (Bills et al., 2019; Wills et al., 2010). Overall cognitive functioning and lower intelligence quotient (IQ) scores are also implicated across individuals with SCD (Ghafuri et al., 2019).

Students with SCD are also prone to difficulties in academics, specifically in reading and math. Students with SCD perform weaker in identifying letters (e.g., basic reading skills) than healthy controls in reading. Similarly, regarding their math abilities, students with SCD perform less proficiently on applied problems (e.g., math problem solving) tasks when compared to healthy controls (Bills et al., 2019; Schatz et al., 2009). Moreover, students with SCD are prone to increased school absences due to disease-specific symptoms and treatment (Harmann et al., 2020; Petersen et al., 2005).

Epping et al. (2012) found that students with SCD were retained at a higher rate and receiving more special education services than healthy African American peers. Of note, many of the students with SCD in this study who were retained did not receive special education services. Barriers to receiving such services may involve a lack of

detailed information regarding their illness from their care team, educator knowledge, and a general misperception of students' behaviors. Similarly, another study found that while students with SCD demonstrated well below-average performance on cognitive and achievement measures, very few received services through an IEP (Petersen et al., 2005). Educators may not fully understand the association between SCD and adverse psychoeducational outcomes, thereby associating a student's lack of adequate performance in the classroom to factors other than symptoms of SCD and either not referring or portraying an inaccurate referral concern to the multidisciplinary team (MDT). The MDT may then forego appropriate service recommendations due to potential exclusionary criteria (e.g., lack of instruction) as outlined in special education law (Federal Register, 2006).

Behaviorally, students with SCD are at increased risk for additional social-emotional difficulties (Menezes et al., 2013). Often, students with SCD have increased internalizing behavioral difficulties (Wills et al., 2010). Such behavioral difficulties may co-occur with the physical symptoms of SCD. In addition to anemia and pain, students with SCD may also be at risk for respiratory complications (e.g., asthma); renal difficulties (e.g., frequent urination, bed-wetting behaviors); the risk for stroke; and delayed development (Lemanek et al., 2017). In addition, experiencing disease-related SCD symptoms contributes to students' school performance (Epping et al., 2012). Furthermore, students with SCD are at higher risk for peer bullying and victimization, which increases the behavioral difficulties they may experience in the school environment (Harmann et al., 2020).

Considering the psychoeducational consequences of illnesses like epilepsy and SCD is critical in assisting school psychologists with evaluation planning and special service eligibility determinations. School psychologists are equipped to assist other school team members in identifying areas in which students have increased challenges within the school environment (Harmann et al., 2020). Given that students with CIs are at increased risk for deficits in educational and social-emotional functioning within the school environment (Compas et al., 2017; Riccio et al., 2014), school psychologists are encouraged to be knowledgeable such areas. By understanding the impact of pediatric CIs on students' functioning within the school environment, school psychologists can determine whether students with CIs are eligible for various school-based services.

Unclear from the current research is whether school psychologists genuinely understand whether the academic and behavioral difficulties students with CIs experience are due to their illness outcomes. Moreover, the extant literature does not discuss whether school psychologists' understanding of CIs and varying illness pathologies influence their evaluation practices, which, in turn, influences the school-based services that are recommended for students with CIs to receive.

Determining Eligibility of Services

According to the Individuals with Disabilities Education Act Section 300.304 (Federal Register, 2006), comprehensive methodology and sound assessment tools are necessary to provide an adequate student evaluation. The law stipulates that gathering information relevant to a child's functional, developmental, and academic information will help ascertain the need for school-based services due to disability status. Moreover, to determine eligibility, the implementation of multiple assessment measures, including

those assessing cognitive, behavioral, physical, and developmental factors, are needed. The evaluation process must be comprehensive to address the child's unique needs and abilities (NASP, 2020). Most importantly, when evaluating a child with a disability, IDEA states: "the evaluation is sufficiently comprehensive to identify all of the child's special education and related services needs, whether or not commonly linked to the disability category in which the child has been classified" (Federal Register, 2006, p. 46785).

IDEA Disability Categories

The Individuals with Disabilities Education Act (IDEA) is a federal statute that guarantees access to a free and appropriate education in the least restrictive environment to any child with a disability (Federal Register, 2006; McBride et al., 2014). There are 13 categories of disabilities under IDEA for which a child with a disability can receive services in the school (Federal Register, 2006). These categories are: Autism, Deaf-Blindness, Deafness, Emotional Disturbance, Hearing Impairment, Intellectual Disability, Multiple Disabilities, Orthopedic Impairment, Other Health Impairment, Specific Learning Disability, Speech or Language Impairment, Traumatic Brain Injury, and Visual Impairment including Blindness. Moreover, there are state-specific rules that school psychologists are to follow to identify and evaluate a student that may qualify for services under one of those 13 categories.

Formal Special Education under IDEA

According to section 300.8 (c) (9) of IDEA, "Other health impairment means "having limited strength, vitality, or alertness, including a heightened alertness to environmental stimuli, that results in limited alertness with respect to the educational

environment, that is due to chronic or acute health problems such as asthma, attention deficit disorder or attention deficit hyperactivity disorder, diabetes, epilepsy, a heart condition, hemophilia, lead poisoning, leukemia, nephritis, rheumatic fever, sickle cell anemia, and Tourette syndrome; and adversely affects a child's educational performance. (Federal Register, 2006, p. 46757).” Simply put, a student who has a medical or health-related impairment impacting their educational performance may qualify under the category of OHI for special education services.

Students with CIs have cognitive, academic, and social-emotional deficits that may impact their functioning within the school environment (DuPaul et al., 2017). If a medical condition adversely impacts students' education and psychosocial functioning in school, students are eligible for various services. For example, if students are ineligible for special education services under OHI based on the notion that their condition does not adversely impact their functioning so that special education services are warranted, they may qualify for services under a Section 504-plan.

Section 504 Plan

Students are eligible for services under a section 504-plan if they have a physical or mental impairment that substantially limits one or more major life activities (Zirkel, 2020). A section 504-plan outlines eligibility of services in the form of accommodations for students. For example, if a student with epilepsy was not educationally impacted by their condition but still has difficulties within a classroom environment, they may benefit from a 504-plan.

According to the US Department of Health and Human Services, Section 504 of the Rehabilitation Act of 1973 is a national law that protects qualified individuals from

discrimination based on their disability. Students with disabilities who attend schools receiving federal financial assistance may receive accommodations or services under Section 504. In order to receive such protections, a student must have: (1) a physical or mental impairment that substantially limits one or more major life activities or (2) a history of such an impairment. Section 504 requires that school districts provide a free, appropriate public education (FAPE) to qualified students in their jurisdictions (see Box 12.3; US Department of Health and Human Services, 2006, <https://www.hhs.gov/sites/default/files/ocr/civilrights/resources/factsheets/504.pdf>).

Services for Students with CI. Wodrich et al. (2006) conducted a study exploring school-service eligibility and placement for students with epilepsy. Students with chronic conditions like epilepsy who have an educational need for services would qualify for services under the IDEA category of OHI or by a 504-plan. This study showed that most students evaluated for psychoeducational deficits qualified for services under other categories such as intellectual disability and speech/language impairment. Although OHI was listed as the second category for which students with epilepsy qualify under IDEA, intellectual disability was the first. Moreover, a 504-plan was not used for any students in this sample. Like other research (DuPaul et al., 2017; Modi et al., 2017), the authors from this study discuss how additional factors, such as the severity of seizures, medication side effects, and other neurological effects, should be considered when determining the eligibility of services for students with epilepsy. The notion of examining medical information outside that is standard during the evaluation process indeed is warranted for other pediatric chronic conditions.

Similarly, concerning SCD, studies have found that one-third to one-half of students may be receiving special education services to accommodate for school-related learning difficulties (Crosby et al., 2015; Karkoska et al., 2021). Of students receiving services, most students in one study demonstrated higher risk, meaning more prevalent symptoms of SCD. However, students exhibiting lower risk in this study also perceived the need for school-based services (Karkoska et al., 2021). Likewise, another study found that 60% of students in the sample reported having academic interference due to SCD related symptoms, yet only 39% of those students noted receiving special education services in the past year (Crosby et al., 2015). Although SCD warrants consideration for special education services under the designation of OHI, educators and school psychologists may not yet associate with SCD as a disorder that may qualify for services under OHI (Dooley and Perkins, 1998). However, existing research is limited in exploring the specific IDEA eligibility categories under which school psychologists recommended most for students with SCD to receive services in school.

Comprehensive Evaluation Processes

Since the beginning of school psychological practice, assessment and evaluation have been key role responsibilities (NASP, 2020). Studies have shown that school psychologists spend roughly 50% of their time engaged in these practices (Benson et al., 2019). School psychologists must use practical problem solving throughout these processes to gain a holistic picture of the referred student and provide information to the MDT to make eligibility decisions (Merrell et al., 2012). There are many tools a school psychologist can utilize when conducting assessments. Merrell et al. (2012) describe the various tools school psychologists may utilize when conducting evaluations of students'

functioning, including intellectual and academic assessments, curriculum-based measures (CBM), behavior rating scales, interviews, observations, and functional behavioral assessments (FBA). In order to choose an assessment tool, school psychologists must review the referral concern and special measures based on the student’s needs.

Definitions for all psychoeducational domains of functioning are presented below in Table 1, based on Miller and Maricle (2019).

Table 1

Description of School Psychology Assessment Tools

| Evaluation Domain | Definition |
|--|---|
| Processing Speed | Skills related to performance on simple and novel cognitive tasks. |
| Verbal Reasoning and Language Skills | Skills related to a child's reasoning using <i>verbal</i> abilities such as their expressive language, receptive language, phonics, and pragmatics. |
| Nonverbal Reasoning and Spatial Skills | A child's fluid reasoning and visual-spatial abilities. Includes perception abilities and integration of visual and motor abilities. |
| Memory and Learning | Includes verbal and nonverbal short-term and working memory, long term delay, recognition. |
| Attention and Executive Functioning | Includes functions related to attention such as: focused attention, selective attention, divided attention, alternating attention/shifting, sustained (vigilance) attention, and attention capacity. Executive functioning relates to the use of self-directed actions related to choosing goals - involves organization, planning, self-monitoring, flexibility, and persistence abilities. |
| Motor Skills | Includes fine motor (small muscle movements such as handwriting) and gross motor (large muscle movements like sitting, standing, walking) skills. |

| | |
|-------------------|--|
| Reading | Include implications for basic reading (phonics, alphabetic principles), reading fluency, and reading comprehension abilities. |
| Writing | Includes spelling, and written expression (transcription, generation, executive functioning related to writing) |
| Math | Math skills involving math calculation, fluency, and reasoning. |
| Behavioral Skills | Includes implications for a child's social & behavioral functioning, such as the impact of chronic illness on student's internalizing/externalizing behaviors. |
| Adaptive Skills | Includes implication for adaptive/functionally related skills such as functional communication, functional motor skills, and others related to skills useful for daily living. |

Implications for Students with CIs

Many of the conditions listed in the definition of OHI are considered CIs, and research has shown an increased rate of CIs in pediatric populations (Barracough & Macheck, 2010). Having a CI has a direct effect on school achievement. Students with CI's are prone to absenteeism, social-emotional adjustment problems, and various neurocognitive impairments based on the presentation of their symptoms (Barracough & Macheck, 2010). However, school psychologists can help support such students by supporting school staff and parents in improving educational and social outcomes (Drotar et al., 2004). With their training in assessment, evaluation, intervention, consultation, school psychologists can be an essential team members in determining the best services for a child with a medical/health-related impairment (Duggan et al., 2004; Ricco et al., 2014).

The basis for determining whether a student is eligible for OHI-related services is if discerning a medical/health-related illness has a severe impact on a student's educational functioning (Federal Register, 2006). The OHI category is vast in its

inclusionary criteria. Wodrich and Spencer (2008) conducted a study to examine school psychologists' perceptions regarding the practices and accommodations related to OHI evaluations. The researchers found that most school psychologists surveyed had encountered OHI placement for students with Attention-Deficit/Hyperactivity Disorder (ADHD), epilepsy, asthma, psychiatric disorders, diabetes, cancer/leukemia, and cardiac conditions. Each student with these illnesses has varying illness pathologies that may qualify them for the same type of services (Compas et al., 2017). Moreover, students with CIs are susceptible to higher absenteeism rates and other functional impairments, for which the school psychologist may need to adjust their evaluation plans (Ricco et al., 2014). School psychologists must utilize appropriate reasoning methods and decision-making processes to aid in their evaluation plans to account for these factors.

Multi-Method Approach

Referring to frameworks such as the multitrait-method approach to multifactorial assessment (MTMM) can help school psychologists plan the evaluation process for students with CIs. The premise of the MTMM approach to psychoeducational assessment is that school psychologists should use multiple methods to assess for the referral concern (Davidow & Levinson, 1993). If the multiple methods converge upon each other or produce similar information, then the school psychologist can be confident in classifying students as eligible or not eligible for services (Gresham, 1983). Using the MTMM approach to guide school psychologists' decision-making during the evaluation process, school psychologists can be confident that the results are a function of the trait (e.g., referral concern) rather than the method used (Davidow & Levinson, 1993).

For example, if a school psychologist evaluated a student with a CI for concerns regarding reading, it would be ideal to use multiple methods to assess this concern. The MTMM framework represents a realistic representation of the biopsychosocial (cultural) framework previously discussed. School psychologists can adequately identify multiple methods of assessment to support or disprove any working hypotheses regarding a student's level of functioning. These methods could include observations, interviews, cognitive and achievement assessments, rating scales, medical information, and record reviews. By completing a comprehensive collection of relevant information, the school psychologist can be confident in their evaluation method when the multiple sources of information coincide.

Building on the MTMM theoretical approach, a more contemporary method includes the multidomain, multimethod, and multisource matrix (e.g., RIOT/ICEL matrix; Christ & Aranas, 2014). The RIOT/ICEL Matrix is an assessment tool used to guide school psychologists in their decision-making during evaluation procedures. School psychologists are encouraged to review multiple sources of information (e.g., Instruction, Curriculum, Environment, and Learner) while using multiple assessment methods (e.g., Review, Interview, Observe, Test). Tools such as the RIOT/ICEL matrix and frameworks such as the MTMM approach can guide school psychologists during the evaluation process. Specific to CIs, school psychologists may be required to use multiple methods to assess students with chronic conditions. School psychologists may be required to collaborate with the student's medical provider to gain information (Drotar et al., 2004). By considering such frameworks and tools during the evaluation process, particularly when evaluating students with CIs, school psychologists are encouraged to use multiple

sources of information and methods, like collaborating with medical providers, to prove their hypotheses (Maki & Adams, 2020; Riccio et al., 2014).

Decision-Making Models

Decision-making is a fundamental competency and particularly valuable in the evaluation process for school psychologists (Maki & Adams, 2020; NASP, 2020). From identifying the referral concern, choosing assessment tools, and determining eligibility for school-based services, school psychologists make practice decisions at each step. The assessment of student's skills through the multidisciplinary evaluation process is often the most time-consuming responsibility for school psychologists. Furthermore, school psychologists speak on behalf of the student's evaluation and assessment results with the members of the multidisciplinary team (MDT) before making eligibility decisions. All members of the MDT decipher the legal definitions regarding special education eligibility and collectively make decisions based on the data gathered regarding the student's eligibility (Sadeh & Sullivan, 2017). Understanding school psychologists' professional decision-making processes can help uncover rationales for decisions during the evaluation process. School psychologists will encounter referrals of students presenting with distinct backgrounds and pathology that contribute to their school performance (DuPaul et al., 2017; Kliebenstein & Broome, 2000; Shore & Shore, 2009).

Understanding the student-level factors contributing to a student's performance is one of many components of clinical decision-making (Sayeda, 2016). Regardless of their referral concerns, students should be evaluated based upon their lived experiences rather than similarities to other cases. For instance, students with the same full-scale intelligence quotients (FSIQ) may have different reasons for achieving this level. Take, for example,

two students that have difficulties in reading comprehension. One student may have difficulties in verbal comprehension, whereas the other in memory; however, both students may have resulting difficulties in reading comprehension (Decker et al., 2013). Although the referral concern was similar across both these instances, the reason behind their level of functioning differed.

This notion of evaluating students based on the individual level of functioning applies to students with CIs – in the case of this study, one student with epilepsy and another student with SCD. The school psychologist receives a referral for both of these students due to reading, writing, and math difficulties. The student with epilepsy is known to have seizures that affect their functioning in school, whereas the student with SCD is reported to become fatigued during class. Given that both these illnesses have a known association with encompassing academic deficits (Bills et al., 2019; Jones et al., 2010; Schatz et al., 2009), the school psychologist should reason through the impact of these illnesses on the students' performance in school. Although both students would receive services if their illness adversely affected their educational performance, the student with SCD may seem to be in greater need of an evaluation due to behavior concerns or performance deficits not associated with their illness. The disease symptom presentation for SCD vastly differs from students with epilepsy (Lemanek et al., 2017; Modi et al., 2017). Understanding disease course, the student's background, and the environmental context of the student's functioning are all components that contribute to the school psychologists' clinical reasoning and judgment when making school service eligibility decisions (Andrews & Syeda, 2016).

Indeed, clinical reasoning is the underpinning of making decisions regarding students' eligibility for special education and treatment planning (Andrews & Syeda, 2016; Wilcox & Schroeder, 2015). School psychologists must reason through the variety of information gathered on the student they evaluate and determine the best course of action to promote adequate student functioning within the school environment. Considering the biopsychosocial (cultural) factors related to a child's functioning aids school psychologists in a holistic consideration of all possible hypotheses related to the referral concern (Sadeh & Sullivan, 2017).

Therefore, it is necessary to think about the implications of clinical reasoning on school psychologists' evaluation of students with CIs like epilepsy and SCD. As previously discussed, research has shown that students with epilepsy and SCD have neurocognitive deficits due to their disease course that affect their psychoeducational functioning (Lemanek et al., 2017; Modi et al., 2017). Knowing this information regarding the impact of CIs on school functioning, school psychologists can utilize their clinical reasoning capabilities to understand this relationship between illness and performance. School psychologists can also collaborate with the students' families, medical providers, and others to formulate their hypotheses before rendering their clinical judgment (Drotar et al., 2004; DuPaul et al., 2017; Shapiro & Manz, 2004). By integrating their prior knowledge, training, the evidence presented to them, and other data from those individuals in the student's life, school psychologists can use sound clinical judgment (Andrews & Syeda, 2016).

School psychologists use two different types of reasoning when making clinical decisions: inductive and deductive reasoning. Wilcox and Schroeder (2015) describe

deductive reasoning as using data and systematic methodology to make decisions, whereas inductive reasoning uses learned experiences and other practical information to make decisions. Although neither clinical reasoning modalities are incorrect, the most effective type of clinical reasoning occurs when school psychologists utilize both methods.

Furthermore, in making clinical reasoning decisions, school psychologists should understand the cognitive processes (e.g., heuristics) that contribute to reasoning (Andrews & Syeda, 2016; Davidow & Levinson, 1993). School psychologists regularly use heuristics, which are cognitive shortcuts used to make decisions based on personal experience (Wilcox & Schroeder, 2014). Research has shown that school psychologists use many methods to gather their data. However, the three most common involve observations in the classroom, assessing a child's language abilities, and an interview with the child (Knoff, 1983).

One type of heuristics that school psychologists may utilize is called *anchoring heuristics* or forming hypotheses based on their initial perceptions on a topic (Davidow & Levinson, 1993; Wilcox & Schroeder, 2014). For example, suppose a school psychologist received a referral for a student with epilepsy. This student primarily experiences epileptic symptoms in the form of absence seizures, which results in the student having inattention difficulties in the classroom. When the school psychologist plans the evaluation process for this student, they may quickly anchor epilepsy as a neurologic disorder, which is a complex disorder and needs a comprehensive evaluation process. With this understanding, school psychologists may resort to inductive reasoning

processes to plan their evaluation of a student with epilepsy and involve comprehensive assessment measures to evaluate the student.

Similarly, another type of heuristic that school psychologists may use is called *representative heuristics*, which involves holding a pre-existing schema about a student's behavior (Davidow & Levinson, 1993; Wilcox & Schroeder, 2014). Having a pre-existing understanding of a student's illness may influence the selection of assessment tools used during the evaluation process. If a student with epilepsy is referred to the school psychologist, the school psychologist may understand that the student's difficulties in the classroom are representative of a student with epilepsy. As a result, the school psychologist would also use inductive reasoning processes and conduct a comprehensive evaluation procedure to understand the student's functional abilities in school.

Lastly, the *availability heuristic* is considering an evaluation complete even when other pending hypotheses might answer the referral question. This construct represents how individuals make decisions based on the ease of the information presented to them (Davidow & Levinson, 1993; Wilcox & Schroeder, 2014). In other words, if the school psychologist conclusively determines the student's difficulties were a result of only attention problems, they may complete their evaluation without considering other explanations. For instance, school psychologists may disregard other hypotheses for behavioral difficulties in the classroom when the student may present with SCD. Based on the available knowledge that SCD is a hematological disorder, school psychologists may not fully understand the illness pathology of SCD and numerous psychoeducational consequences of SCD. The evaluation plan created for a student with SCD may result in

school psychologists utilizing deductive reasoning processes and not including comprehensive neuropsychological procedures in their evaluation based on limited knowledge of the psychoeducational consequences of SCD.

When evaluating students with CIs, school psychologists need to consider their pre-existing knowledge and schemas regarding the individual students. Demonstrating competency in recognizing pre-existing biases can reduce ineffective evaluation and eligibility determination practices for school psychologists (Sadeh & Sullivan, 2017). Recognizing that students with CIs may be having difficulties in school due to their illness is helpful when conducting an evaluation (Riccio et al., 2014). School psychologists can combat the challenges of evaluating students with CIs by using multiple sources of information, assessment tools and identifying their cognitive biases towards a student's illness. Furthermore, school psychologists can better assist themselves in decision-making during the evaluation process by utilizing empirically established tools and frameworks.

Summary

With increasing rates of pediatric CIs and students with illnesses in the school environment (Brown, 2004; Riccio et al., 2014), school psychologists need to understand the most prevalent CIs and their implications on students' psychoeducational functioning. Understanding the implications of disease on students' psychoeducational functioning requires school psychologists to engage in holistic decision-making during the evaluation process, such as considering the biopsychosocial (cultural) factors related to a student's functioning in the school environment (Engel, 1980; Henningsen, 2015).

School psychologists need to consider illness pathology, severity, and side-effects of medications on students' psychoeducational functioning (Lemanek et al., 2017; Modi et al., 2017). For example, epilepsy is a neurological disease, whereas SCD is a hematological disease. If a school psychologist encounters two students with each of these illnesses, each with an educational deficit, both students warrant similar evaluation procedures and eligibility of services. It is currently unknown whether school psychologists understand and integrate these components into their decision-making for school service determination.

Typically, school psychologists determine the eligibility of school-based services for students with CIs under the IDEA category of Other Health Impairment or under a Section 504-plan (Wodrich et al., 2006; Zirkel, 2020). However, it is unknown how school psychologists make these eligibility determinations and the decision-making involved. This study will examine school psychologists' evaluation planning for students with CI and differences in the level of impairment. This study aims to explore school psychologists' understanding of two distinct primary neurologic (epilepsy) and non-neurologic (sickle cell disease) CIs and the evaluation methodology used to determine the eligibility of the appropriate school-based services for students with these illnesses. An overview of the quantitative methodology used to ascertain this information will be discussed in Chapter III.

Chapter 3

School psychologists must engage in comprehensive evaluation procedures when evaluating students to determine their eligibility and need for specialized services in the school (IDEA, 2004; NASP, 2020). Given the increasing prevalence rate of pediatric CIs and the resulting presence of students with CIs in school (Barraclough & Macheck, 2010; Compas et al., 2012), school psychologists are required to be knowledgeable of the implication of illness on psychoeducational functioning (APA, 1998; Schmitt et al., 2019). It is currently unknown whether school psychologists' understanding of CI impacts the complexity of their evaluation plans. Additionally, does illness pathology and differences in the severity of resulting impairments influence school psychologists' special education service decisions? In the same light, it is also unknown whether school psychologists correctly recommend OHI-related services for students with CIs. Accordingly, this study explored the impact of school psychologists' understanding of CIs on their evaluation plans and special service eligibility decisions.

Research Design

This study employed a multiple-condition (group), cross-sectional design. Cross-sectional research designs allow researchers to gather information from multiple participants at one point in time. In doing so, researchers can efficiently collect data while accounting for any variance due to time and examine unknown relationships between variables. In alignment with this proposed study design, cross-sectional designs also permit researchers to examine alternative explanations using varying case conditions (Spector, 2019).

Participants and Recruitment of Participants

Participants included credentialed school psychologists currently working in school districts across the US. The sample was selected to reflect the school districts listed in the 2019-2020 public database of school districts on the National Center for Educational Statistics website. From this database, forty public school districts in each state were randomly chosen by using a random number generator. Following the selection of districts, the emails of the school psychologists from those school systems were obtained from the respective school district website.

A priori power analyses using R-studio and JAMOVI software computed the sample size necessary to answer the proposed research questions. An effect size of $d = .50$, power of .80, and alpha level of $p < .05$ were used to determine the sample size required for each research question. An effect size of $d = .50$ and a power level of .80 was chosen based on what most researchers have utilized to conduct their studies with adequate power and sample size (Lipsey & Wilson, 1993; UCLA, n.d.). To achieve this level of power, a total sample size between $N = 120$ and $N = 200$ was anticipated. Because it is expected that only 20% to 30% of recruitment emails will result in active research participants, recruitment will account for far more than 120-200 participants. If data are returned incomplete, those cases will be disregarded. The sample size proposed accounts for this possibility of missing data. Information regarding the sample size needed to answer each research question is included below.

General Survey Procedures

This study proposed a mixed-method quantitative and qualitative survey methodology. Survey methodology allowed for a wide range of school psychologists

practicing in public school settings throughout the US for potential inclusion in this study. The survey was created through the Qualtrics XM software and distributed to potential respondents through email. The survey contained an electronic consent form as required by the IRB, demographic questions, and then explored the four research questions as discussed below. Data obtained through Qualtrics XM was exported to SPSS. Lastly, the survey was reviewed by experts who are school psychology faculty members to ensure the survey questions' clarity and feasibility in answering the stated research questions.

Demographic Data

The following demographic variables were also assessed to gather information about the sample of participants: gender (e.g., male, female, transgender, other), race/ethnicity (e.g., American Indian or Alaska Native, Asian, Black or African American, Hispanic or Latino, Native Hawaiian or Other Pacific Islander, White), geographic region (e.g., northeast, southwest, west, southeast, and Midwest), highest degree (e.g., EdS, PsyD, PhD), years of school psychology practice (open-ended), and the extent to which training was received on neuropsychological evaluation and where that training was received. See Appendix A for demographic questions.

Table 2

| <i>Participant Demographics</i> | |
|--|--------------------|
| Variable | <i>N (%) = 200</i> |
| Gender Identity ^a | |
| Male | 44 (22.0) |
| Female | 155 (77.5) |
| Race and Ethnicity ^b | |
| Black/African American | 10 (5.0) |
| Hispanic/Latinx | 5 (3) |
| Asian/Native Hawaiian/Other Pacific Islander | 3 (1.5) |

| | |
|---|---------------|
| White/Caucasian | 172 (86.0) |
| Mixed Race | 5 (2.5) |
| Geographic Region of Practice ^c | |
| Northeast | 51 (25.5) |
| Southeast | 77 (38.5) |
| Northwest | 7 (3.5) |
| Southwest | 18 (9.0) |
| Midwest | 46 (23.0) |
| Highest Degree Obtained ^d | |
| EdS | 142 (71.0) |
| PsyD | 13 (6.5) |
| PhD | 15 (7.5) |
| Supervision in Neuropsychological Assessment Received ^e | |
| Yes | 161 (80.5) |
| No | 37 (18.5) |
| Years of Practice, <i>M</i> (<i>SD</i>) | 15.08 (10.28) |

Note. a = 1 missing case; b = 5 missing cases; c = 1 missing case; d = 15 missing cases; e = 2 missing cases

Case Conditions

Participants were assigned to one of four case conditions with corresponding case vignettes. The case vignettes were identical for student demographics (i.e., African American male, eight years of age in the third grade). The cases differed by CI and cognitive and achievement scores. Case 1 presented epilepsy with average cognitive and achievement scores as described within a standard score of 85. Case 2 presented SCD with average cognitive and achievement scores described within a standard score of 85. Case 3 presented epilepsy with low average cognitive and achievement scores described within a standard score of 76. Finally, case 4 presented SCD with low average cognitive and achievement scores described within a standard score of 76. These cases allowed for exploring the interaction between illness pathology and degree of functional impairment when making special service eligibility decisions (see Appendix A for case vignettes).

Research Question 1 Methodological Procedures

Research Question 1

Do the evaluation plans of school psychologists differ in the number of domains assessed for a neurologically rooted versus a non-neurologically rooted disorder?

Survey Materials. Participants were asked for domains of functioning (not test/subtest names) that they wished to include in their evaluation report/plan through an open-ended response option. Based on their answers, a total score was calculated in reflecting all the neuropsychological domains they selected ($n = 7$). See Appendix A for further information.

Coding. Participants' open-ended responses for domains of functioning they wished to include in their evaluation plan was first coded by the primary investigator. Possible answers to coding were determined a priori, in consultation with expert school psychologists and faculty members. An independent and expert school psychologist and faculty member, who primarily assisted with determining the codes, then rated 20% of all cases ($n = 40$). An interrater reliability analysis was conducted and two raters were found to be within 97% in agreement of all possible codes.

Data Analysis Plan. First, descriptive statistics were calculated by examining the frequency of responses across the epilepsy case condition and the SCD case conditions. Next, an independent samples t-test was conducted to determine if the number of neuropsychological domains represented on the respective evaluation plans significantly differed across illness types, and subsequently by impairment severity. A Cohen's d effect size was also calculated to examine the strength of any differences across groups. Finally, a 2x2 factorial ANOVA was conducted to determine if any main

or interaction effects are present to determine if the neuropsychological domains of functioning represented on the respective evaluation plans significantly differ across the four conditions. An effect size was calculated to examine the strength of any differences across groups using a partial eta squared variable. Finally, additional chi-square analyses were run to further determine whether participants included specific domains of functioning more or less for the varying illness type and impairment severity groups. A phi coefficient was calculated to determine the strength of any differences across groups.

Power. A priori power analyses were conducted in JAMOVI to examine the sample size needed to utilize an independent samples t-test to answer research question 1. Based on the results, to achieve an effect size of $d = .50$, power of .80, and an alpha level of $p < .05$, a sample size of $N = 32$ was needed in each group (total participants = 128).

Research Question 2 Methodological Procedures

Research Question 2

When provided with an ambiguous case, does the special service recommendation of school psychologists vary by disorder type (neurologically-rooted or non-neurologically-rooted disorder) and the severity of functional impairment?

Survey Materials. Respondents selected which school-based service they would recommend based on the presented case. The options were listed as follows: (1) No special services, (2) Section 504-plan, and (3) Formal special education under IDEA. See Appendix A for further information.

Data Analysis Plan. Descriptive statistics will first be examined regarding the frequency of responses across the special service recommendations made by school psychologists. A chi-square analysis (2x3 cross tabs) will be executed to examine

whether the special service recommendations significantly differed across the four conditions to understand the association between these recommendations and the severity of functional impairments. In addition, differences in special service recommendations between illness type and impairment severity groups were also conducted using subsequent 2x2 cross tabs analyses. A phi coefficient was calculated to determine the strength of any differences across groups.

Power. A priori power analyses were conducted in R-Studio to examine the sample size needed to utilize a chi-square analysis to answer research question 2. Based on the results, to achieve an effect size of $d = .50$, power of .80, and an alpha level of $p < .05$, a sample size of $N = 38$ was needed in each group (total participants = 152). The proposed sample size and retention rate should, in fact, provide enough power for these analyses to be achieved.

Research Question 3 Methodological Procedures

Research Question 3

Regardless of impairment severity, if a school psychologist participant recommends special education eligibility for a student with epilepsy or SCD, which IDEA eligibility category is most frequently recommended?

Survey Materials. Participants who chose the formal special education under IDEA option selected which IDEA category they would select for the presented case. All 13 IDEA categories will be listed in a dropdown box option. See Appendix A for further information.

Data Analysis Plan. Descriptive statistics (e.g., frequency of responses) to understand which IDEA category was most frequently recommended was first be

executed. Next, chi-square analyses (one-way crosstabs) was conducted to explore significant differences in IDEA category recommendation between all four conditions. In addition, differences in IDEA category recommendations between illness type and impairment severity groups were also conducted using subsequent 2x2 cross tabs analyses. A phi coefficient was calculated to determine the strength of any differences across groups.

Additionally, for participants that selected other IDEA categories that were not Other Health Impairment (OHI), a qualitative analysis describing the reasons for choosing non-OHI eligibility categories was conducted. All answers were obtained from the results of question 3 on the survey (see Appendix A). The provided answers were then grouped by similar answers, and displayed by condition, and suggested IDEA eligibility category.

Power. A priori power analyses were conducted in R-Studio to examine the sample size needed to utilize a chi-square analysis to answer research question 3. Based on the results, to achieve an effect size of $d = .50$, power of .80, and an alpha level of $p < .05$, a sample size of $N = 34$ was needed in each group (total participants = 136). The proposed sample size and retention rate should, in fact, provide enough power for these analyses to be achieved.

Research Question 4 Methodological Procedures

Research Question 4

Are school psychologists more likely to reference additional medical record information with regards to kids with epilepsy versus sickle cell disease?

Survey Materials. Participants were asked to describe their rationale for choosing their special service recommendation through an open-ended response option. Based on their answers, if participants referenced utilizing additional medical record information, they received a “yes” code.

Data Analysis Plan. Descriptive statistics (e.g., frequency of response) to understand whether participants indicate they will reference medical record information was first executed. Next, chi-square analyses (one-way crosstabs) were conducted to explore significant differences in referencing medical record information between the conditions. A phi coefficient was calculated to determine the strength of any differences across groups.

Power. A priori power analyses were conducted in R-Studio to examine the sample size needed to utilize a chi-square analysis to answer research question 4. Based on the results, to achieve an effect size of $d = .50$, power of .80, and an alpha level of $p < .05$, a sample size of $N = 43$ was needed in each group (total participants = 172). The proposed sample size and retention rate should, in fact, provided enough power for these analyses to be achieved.

Summary

This study evaluated school psychologists’ evaluation planning for students with CI and differences because of students’ level of impairment. This study explored school psychologists’ understanding of two distinct primary neurologic (epilepsy) and non-neurologic (sickle cell disease) CIs and the evaluation methodology used to determine the eligibility of the appropriate school-based services for students with these illnesses. Although these illnesses differ in symptom presentation and the possible implications for

psychoeducational and functional deficits, students with these CIs with apparent functional impairments and adverse educational impact should qualify for special education services under the IDEA category of Other Health Impairment. This study quantitatively assessed school psychologists' understanding and service recommendations in these areas through a survey. Participants were randomly selected from the National Center for Educational Statistics list of public school districts in the US. Descriptive statistics, inferential statistics (e.g., t-test), factorial ANOVA, and chi-square analyses will be the primary statistical analyses used to understand these questions. In the subsequent chapter, the results from this study and the analyses associated with the research questions proposed are presented

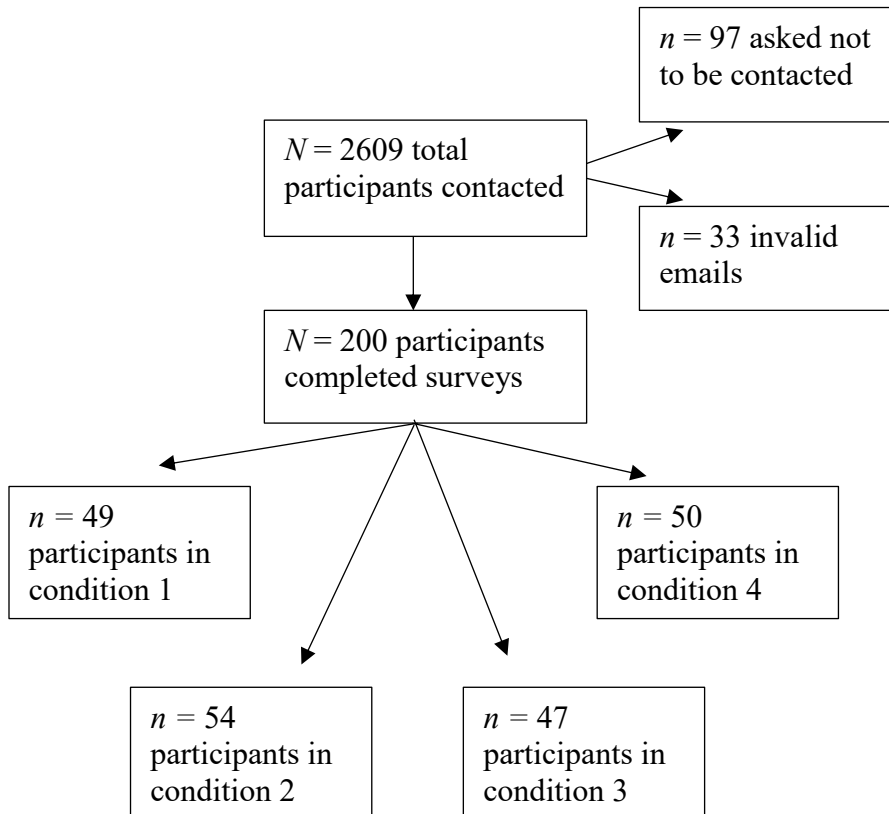
Chapter 4

Participant Recruitment

Recruitment of participants occurred between October 2021 and March 2022. A total of 2609 potential participants across the nation were asked to participate in this study. Of these, 200 participants met inclusion criteria and completed the survey via Qualtrics with no missing data, meeting a retention rate of 7.7%. The total number of participants in the sample size exceeded the number required for power to detect a meaningful change. A further breakdown of participants per case condition is presented below in Figure 1.

Figure 1

Breakdown of Participant Recruitment



Note. Condition 1 = 85 standard score epilepsy case; Condition 2 = 76 standard score epilepsy case; Condition 3 = 85 standard score sickle cell disease (SCD) case; Condition 4 = 76 standard score SCD case.

Analyses

Evaluation Plan

Research question 1 examined whether school psychologists' provision of comprehensive evaluation plans, denoted by total number of neuropsychological domains of functioning present in said plan, differed for students with a neurologically rooted disorder (epilepsy) versus a non-neurologically rooted disorder (sickle cell disease). The following neuropsychological domains of functioning were indicated by participants to be present in their evaluation plans, regardless of case condition, in descending order: attention/executive functioning ($n = 109, 54.5\%$), adaptive skills ($n = 43, 21.5\%$), verbal/language skills ($n = 34, 17.0\%$), memory/learning ($n = 38, 19.0\%$), motor ($n = 13, 6.5\%$), processing speed ($n = 9, 4.5\%$), nonverbal/spatial skills ($n = 8, 4.0\%$). See figure 2 and table 3 for more information.

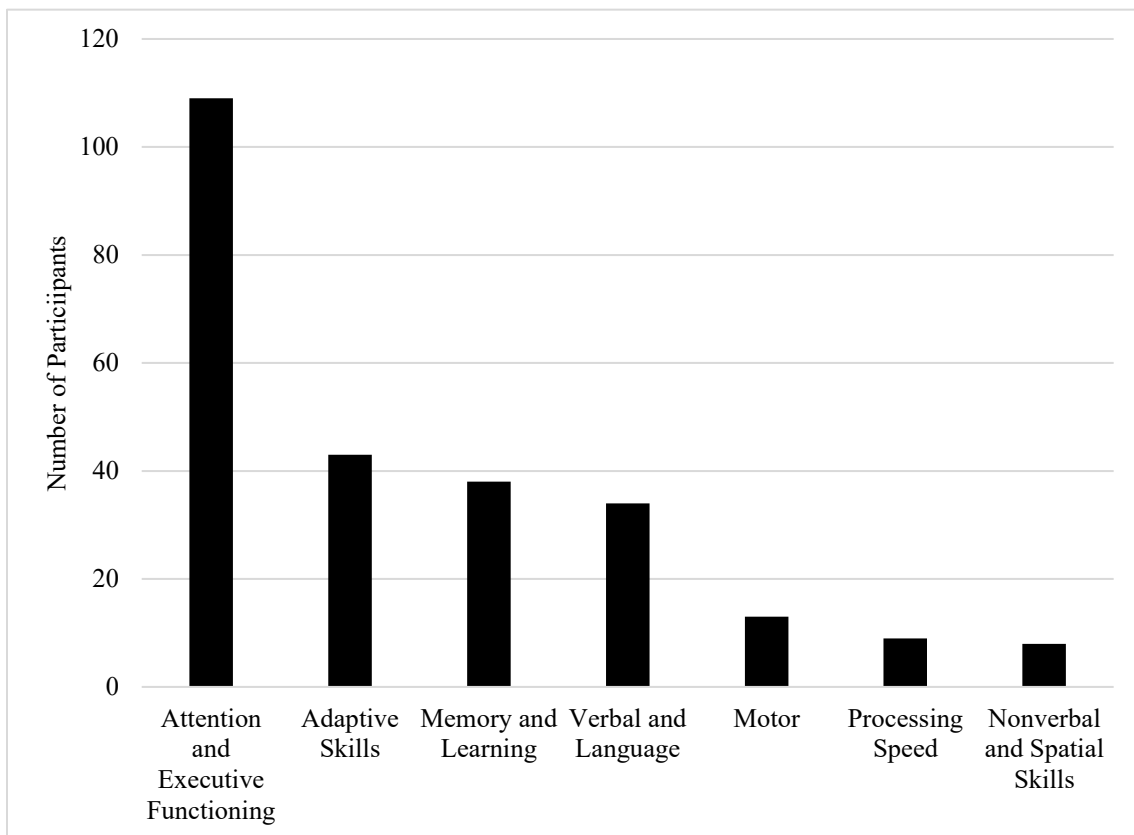
Table 3

| <i>Total Domains Included in Evaluation Plan (N = 200)</i> | |
|--|------------|
| Variable | N (%) |
| Neuropsychological and Functional Domains | |
| Attention and Executive Functioning | 109 (54.5) |
| Adaptive Skills | 43 (21.5) |
| Memory and Learning | 38 (19.0) |
| Verbal and Language | 34 (17.0) |
| Motor | 13 (6.5) |
| Processing Speed | 9 (4.5) |
| Nonverbal and Spatial Skills | 8 (4.0) |
| Other Evaluation Techniques | |
| Medical | 133 (66.5) |
| Documentation/Consultation | |

| | |
|------------------------------|------------|
| Academic Skills | 132 (66.0) |
| Intellectual Assessment | 125 (62.5) |
| Social Emotional Functioning | 113 (56.5) |
| Record Review | 92 (46.0) |
| Observations | 51 (25.5) |
| Interview | 37 (18.5) |

Figure 2

Neuropsychological and Functional Domains of Functioning Across all Four Conditions



To first determine whether any meaningful differences were present in the number of domains assessed by illness type (e.g., epilepsy vs. SCD), an independent samples t-test was conducted, and a small effect was present ($t(189.148) = 1.982, p = .024, d = .282$), with the epilepsy condition participants including 0.32 more domains in their evaluation plans. Similarly, the same notion was extended to determine whether this

difference was also present by impairment severity (e.g., 85 vs. 75 standard scores), and the independent samples *t*-test conducted showed a small effect ($t(198) = -1.958, p = .026, d = -.277$), with the very low scores condition participants including 0.31 more domains in their evaluation plans. To further determine the interaction between illness type and impairment severity, a 2x2 factorial ANOVA was conducted. All assumptions were met to proceed with such analysis, particularly due to the robust sample size and the necessary power to conduct these analyses. Results showed a small main effect for illness type ($F(1,3) = 3.838, p = .052, \eta^2 = .019$) and for impairment severity ($F(1,3) = 3.661, p = .057, \eta^2 = .018$), but no interaction effect ($F(1,3) = 1.042, p = .309, \eta^2 = .005$). Participants in the epilepsy and below average standard score conditions provided slightly more domains of functioning in their suggested evaluation plans compared to those in the SCD and very low standard score conditions. See figure 3 and tables 4-5 for more information.

Table 4

Independent Samples t-test Comparing Domains of Functioning Included in Evaluation Plans by Case Condition

| Case Condition | <i>M</i> (<i>SD</i>) | <i>t</i> (<i>df</i>) | <i>p</i> -value | 95% CI | Cohen's <i>d</i> |
|------------------------------------|------------------------|------------------------|-----------------|------------------|------------------|
| Epilepsy (<i>n</i> = 96) | 1.44 (1.22) | $t(189.148) = 1.982$ | $p = .024$ | [-.643, .002] | .282 |
| SCD (<i>n</i> = 104) | 1.12 (1.06) | | | | |
| Below Average (<i>n</i> = 103) | 1.43 (1.22) | $t(198) = -1.958$ | $p = .026$ | [-.637, .004] | -.277 |
| Very Low (<i>n</i> = 97) | 1.12 (1.06) | | | | |

Figure 3

Estimated Marginal Means Regarding Case Conditions and Number of Evaluation Plan

Domains

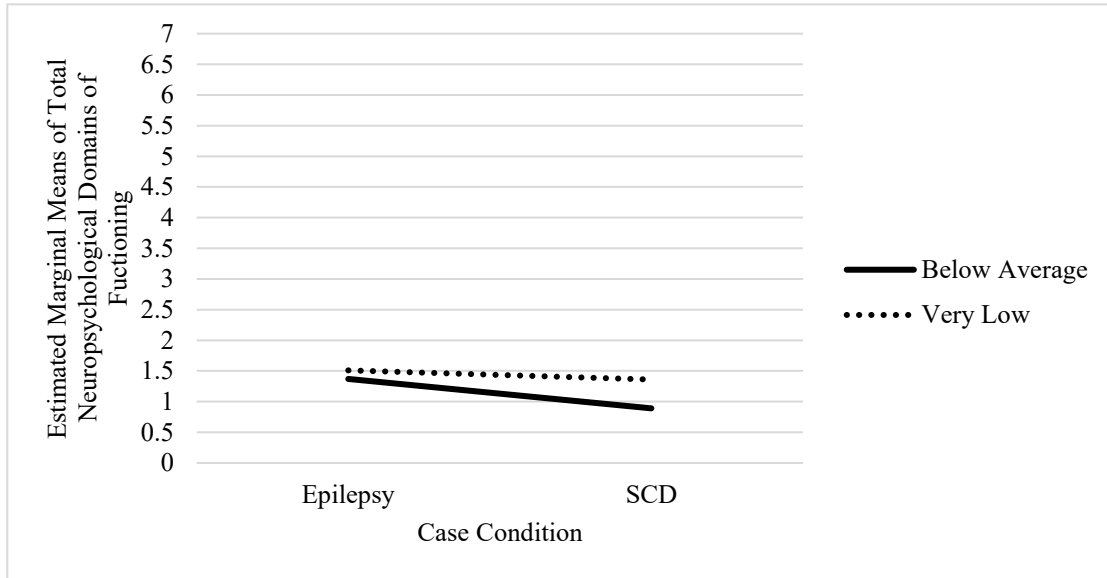


Table 5

Factorial ANOVA Regarding the Interaction between Illness Type and Impairment Severity and Total Domains of Functioning

| Variable | Type III Sum of Squares | df | Mean Square | F statistic | Sig. | Partial Eta Squared (η^2) |
|---------------------|-------------------------|----|-------------|-------------|------------|----------------------------------|
| Intercept | 327.728 | 1 | 327.728 | 254.914 | $p < .001$ | .565 |
| Illness Type | 4.934 | 1 | 4.934 | 3.838 | $p = .052$ | .019 |
| Impairment Severity | 4.707 | 1 | 4.707 | 3.661 | $p = .057$ | .018 |
| Interaction | 1.340 | 1 | 1.340 | 1.042 | $p = .309$ | .005 |

Domains of Functioning by Illness Type

Additional chi-square analyses were conducted to determine whether any meaningful differences were present in whether school psychologists referenced domains of functioning more in epilepsy versus SCD case conditions and likewise in the below average and very low scores case conditions. All variables referenced in the RIOT/ICEL

matrix, along with the neuropsychological domains of functioning, were included and explored for these extra analyses. See table 6 and 7 for more information.

Table 6

Number of Domains Included in Evaluation Plan by Illness Type

| Variable | Epilepsy N(%)= 96 | SCD N(%) = 104 | χ^2 (df) | Sig. | Phi |
|--|----------------------|----------------------|---------------|-----------------------|-------|
| Neuropsychological and Functional Domains | | | | | |
| Processing speed | 5 (2.5) | 4 (2.0) | .216 (1) | $p = .740$ | -.033 |
| Verbal and language | 19 (9.5) | 15 (7.5) | 1.02 (1) | $p = .350$ | -.071 |
| Nonverbal and spatial skills | 6 (3.0) | 2 (1.0) | 2.432 (1) | $p = .157$ | -.110 |
| Memory and Learning | 25 (12.5) | 13 (6.5) | 5.948 (1) | $p =$.019* | -.172 |
| Attention and Executive Functioning | 53 (26.5) | 56 (28.0) | .037 (1) | $p = .888$ | -.014 |
| Motor Adaptive Skills | 7 (3.5) | 6 (3.0) | .190 (1) | $p = .777$ | -.031 |
| | 23 (11.5) | 20 (10.0) | .661(1) | $p = .492$ | -.057 |
| Other Evaluation Techniques | | | | | |
| Intellectual Assessment | 67 (33.5) | 58 (29.0) | 4.188 (1) | $p =$.043 | -.145 |
| Social Emotional Functioning | 54 (27.0) | 59 (29.5) | .005 (1) | $p = 1.00$ | .005 |
| Academic Skills | 62 (31.0) | 70 (35.0) | .156 (1) | $p = .765$ | .029 |
| Record Review | 51 (25.5) | 41 (20.5) | 3.773 (1) | $p = .065$ | -.137 |
| Medical Documentation/Consultation | 70 (35.0) | 63 (31.5) | 3.412 (1) | $p = .073$ | -.131 |
| Interview | 9 (4.5) | 28 (14.0) | 10.195 (1) | $p =$.002* | .226 |
| Observations | 25 (12.5) | 26 (13.0) | .029 (1) | $p = .873$ | -.012 |

Note. * = significance at the alpha $p < .05$ level.

Table 7

Number of Domains Included in Evaluation Plan by Impairment Severity

| Variable | Below Average N(%) = 103 | Very Low N(%) = 97 | χ^2 (df) | Sig. | Phi |
|--|--------------------------------|--------------------------|---------------|------------|-------|
| Neuropsychological and Functional Domains | | | | | |
| Processing Speed | 5 (2.5) | 4 (2.0) | .062 (1) | $p = 1.00$ | -.018 |

| | | | | | |
|-------------------------------------|-----------|-----------|-----------|--------------|-------|
| Verbal and Language | 16 (8.0) | 18 (9.0) | .323 (1) | $p = .579$ | .040 |
| Nonverbal and Spatial Skills | 2 (1.0) | 6 (3.0) | 2.343 (1) | $p = .160$ | .108 |
| Memory and Learning | 18 (9.0) | 20 (10.0) | .321 (1) | $p = .593$ | .040 |
| Attention and Executive Functioning | 59 (29.5) | 50 (25.0) | .663 (1) | $p = .478$ | -.058 |
| Motor | 2 (1.0) | 11 (5.5) | 7.261 (1) | $p = .009^*$ | .191 |
| Adaptive Skills | 13 (6.5) | 30 (15.0) | 9.919 (1) | $p = .002^*$ | .223 |
| Other Evaluation Techniques | | | | | |
| Intellectual Assessment | 68 (34.0) | 57 (28.5) | 1.122 (1) | $p = .309$ | -.075 |
| Social Emotional Functioning | 54 (27.0) | 59 (29.5) | 1.433 (1) | $p = .255$ | .085 |
| Academic Skills | 78 (39.0) | 54 (27.0) | 8.956 (1) | $p = .003^*$ | -.212 |
| Record Review | 45 (22.5) | 47 (23.5) | .456 (1) | $p = .571$ | .048 |
| Medical Documentation/Consultation | 76 (38.0) | 57 (28.5) | 5.061 (1) | $p = .026^*$ | -.159 |
| Interview | 19 (9.5) | 18 (9.0) | .000 (1) | $p = 1.00$ | .001 |
| Observations | 26 (13.0) | 25 (12.5) | .007 (1) | $p = 1.00$ | .006 |

Note. * = significance at the alpha $p < .05$ level.

Special Service Recommendation

Research question 2 examined whether special service recommendations differed for school psychologists when presented with an ambiguous case that varied by illness type and impairment severity. First, special service decisions among school psychologists were examined by illness type and impairment severity were examined using chi-square analyses. No meaningful differences were present in special service recommendations by illness type ($X^2(2) = 1.977, p = .372, Phi = .101$) nor by impairment severity ($X^2(2) = 4.762, p = .092, Phi = .157$). See table 8 for more information.

Table 8

Special Service Recommendation by Case Condition

| Case Condition | No Special Services | 504 Plan | Special Services under IDEA | $X^2(df)$ | Sig. | Phi |
|--------------------------------|---------------------|-----------|-----------------------------|------------------|------------|--------------|
| Epilepsy ($n = 96$) | 5 (5.4) | 17 (18.5) | 70 (76.1) | $X^2(2) = 1.977$ | $p = .372$ | $Phi = .101$ |
| SCD ($n = 104$) | 6 (5.9) | 27 (26.7) | 68 (67.3) | | | |
| Below Average ($n = 103$) | 8 (8.0) | 27 (27.0) | 65 (65.0) | $X^2(2) = 4.762$ | $p = .092$ | $Phi = .157$ |
| Very Low ($n = 97$) | 3 (3.2) | 17 (18.3) | 73 (78.5) | | | |

Collectively, all four case conditions were compared using a chi-square analyses to determine whether differences persisted. Within the epilepsy below average scores case condition, 65.2% ($n = 30$) participants recommended special services under IDEA, 26.1% ($n = 12$) participants recommended a 504 plan, 8.7% ($n = 4$) participants recommended no special services. Among the epilepsy very low scores case condition, 87.0% ($n = 40$) participants recommended special services under IDEA, 10.9 ($n = 5$) participants recommended a 504 plan, 2.2% ($n = 1$) participant recommended no special services. In the SCD below average scores case condition, 64.8% ($n = 35$) participants recommended special services under IDEA, 27.8% ($n = 15$) participants recommended a 504 plan, 7.4% ($n = 4$) participants recommended no special services. Amongst the SCD very low scores case condition, 70.2% ($n = 33$) participants recommended special services under IDEA, 25.5% ($n = 12$) participants recommended a 504 plan, 4.3% ($n = 2$) participants recommended no special services. Chi-square analyses determined that there were no meaningful differences in recommended special service types across case

conditions ($X^2(6) = 8.146, p = .228, phi = .205$). See table 9 and figure 4 for more information.

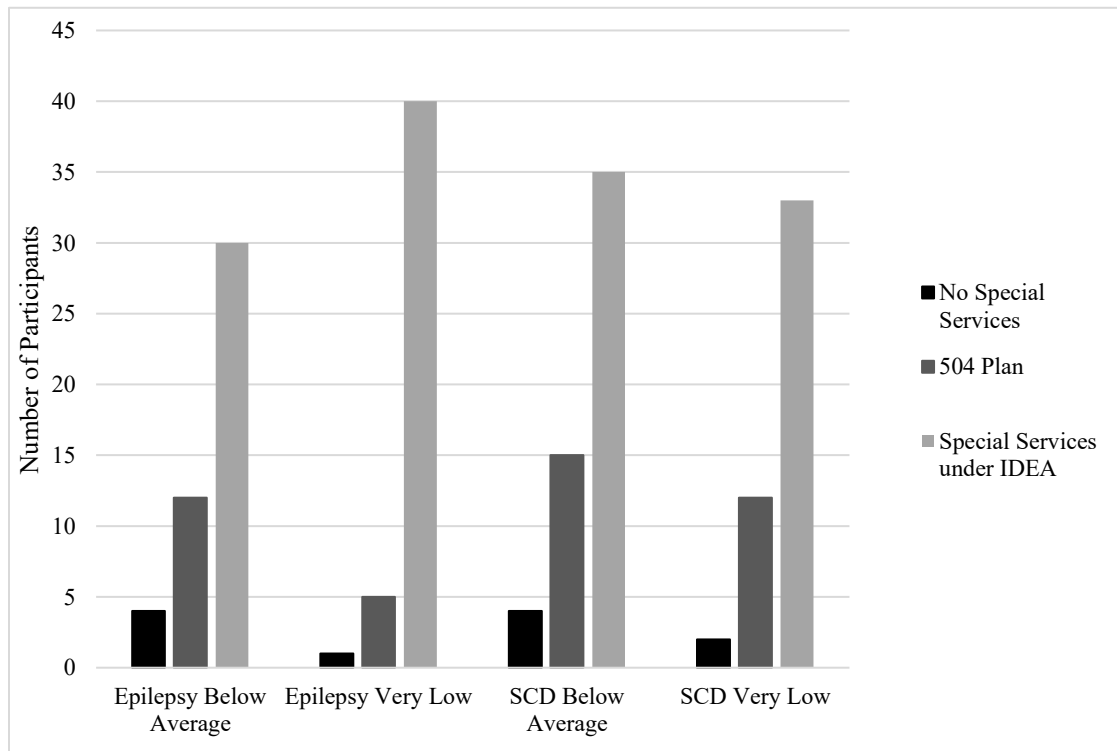
Table 9

Recommended Special Service Types by Case Condition

| Case Condition | No Special Services | 504 Plan | Special Services under IDEA | $X^2(df)$ | Sig. | Phi |
|-------------------------------------|---------------------|-----------|-----------------------------|------------------|------------|--------------|
| Epilepsy Below Average ($n = 49$) | 4 (8.7) | 12 (26.1) | 30 (65.2) | $X^2(6) = 8.146$ | $p = .228$ | $Phi = .205$ |
| Epilepsy Very Low ($n = 47$) | 1 (2.2) | 5 (10.9) | 40 (87.0) | | | |
| SCD Below Average ($n = 54$) | 4 (7.4) | 15 (27.8) | 35 (64.8) | | | |
| SCD Very Low ($n = 50$) | 2 (4.3) | 12 (25.5) | 33 (70.2) | | | |

Figure 4

Recommended Special Service Types by Case Condition



IDEA Recommendation

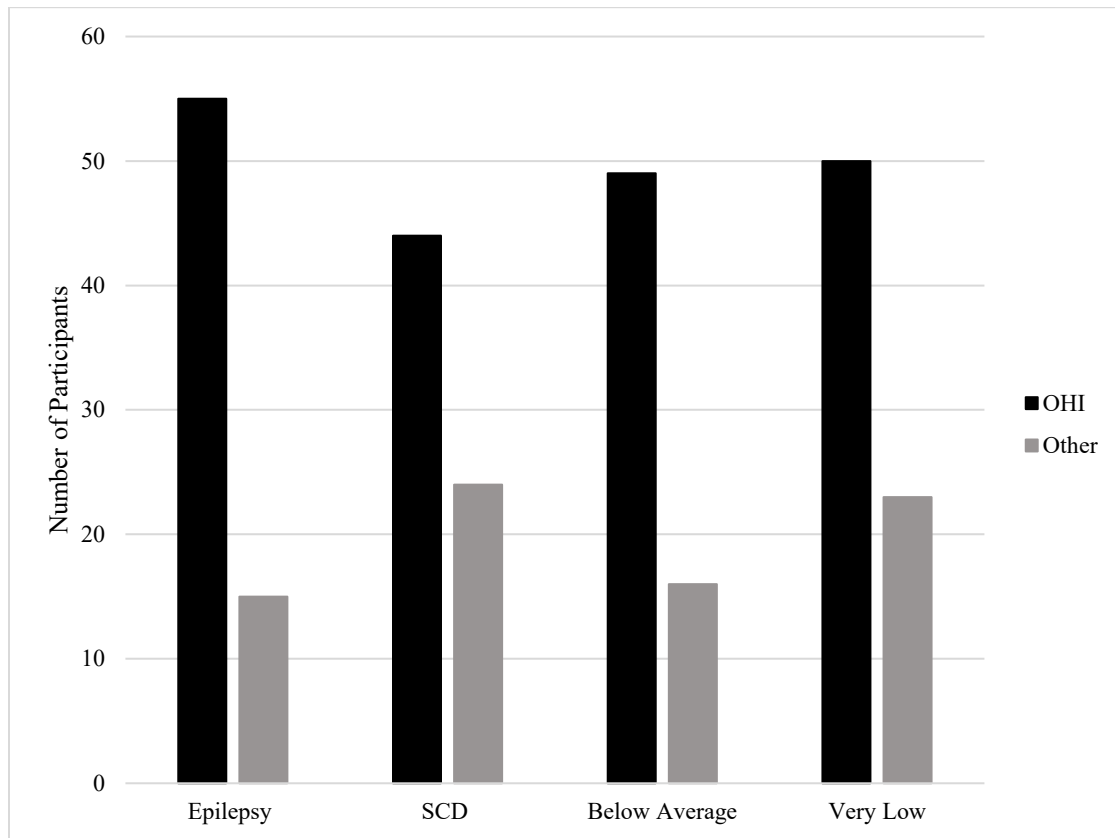
Research question 3 investigated which IDEA eligibility category was most frequently recommended and whether any differences existed due to illness type and impairment severity. After reviewing the responses to this question, participants selected five eligibility categories: OHI, SLD, ID, Multiple Disabilities, and TBI. Analyses for this question were conducted by collapsing results into those who selected OHI versus other, which consisted of the remainder eligibility categories listed. To examine whether differences in IDEA eligibility category selection among school psychologists differed by illness type and impairment severity, chi-square analyses were conducted to determine differences in special services recommendation by illness type and by impairment severity. No meaningful differences were present in special service recommendations by illness type ($X^2(1) = 3.271, p = .089, phi = .154$) nor by impairment severity ($X^2(1) = .805, p = .450, phi = .076$). See table 10 and figure 5 for more information.

Table 10

| <i>Suggested IDEA Eligibility Category</i> | OHI | Other | $X^2(df)$ | Sig. | Phi |
|--|-----------|-----------|---------------------|------------|--------------|
| Case Condition | | | | | |
| Epilepsy ($n = 70$) | 55 (55.6) | 15 (38.5) | $X^2(1) =$ 3.271 | $p = .089$ | $Phi = .154$ |
| SCD ($n = 68$) | 44 (44.4) | 24 (61.5) | | | |
| Below Average ($n = 65$) | 49 (49.5) | 16 (41.0) | $X^2(1) =$.805 | $p = .450$ | $Phi = .076$ |
| Very Low ($n = 73$) | 50 (50.5) | 23 (59.0) | | | |

Figure 5

Suggested IDEA Eligibility Category



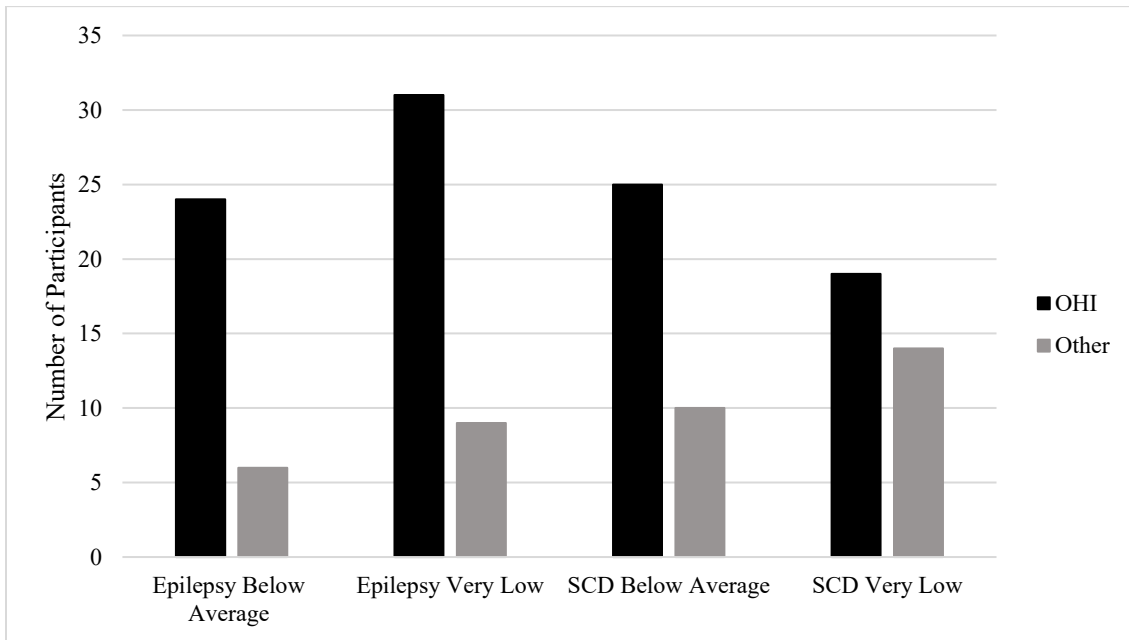
All four case conditions were compared using a chi-square analyses to determine whether differences persisted. Within the epilepsy below average scores case condition, 24.2% ($n = 24$) participants selected OHI and 15.4% ($n = 6$) selected other. Among the epilepsy very low scores case condition, 31.3% ($n = 31$) participants selected OHI and 23.1% ($n = 9$) selected other. In the SCD below average scores case condition, 25.3% ($n = 25$) participants selected OHI, 25.6% ($n = 10$) participants selected other. Amongst the SCD very low scores case condition, 19.2% ($n = 19$) participants selected OHI, 35.9% ($n = 14$) participants selected other. Chi-square analyses determined no meaningful differences present ($X^2(3) = 4.931, p = .177, phi = .189$). See table 11 and figure 6 for more information.

Table 11

| <i>Suggested IDEA Eligibility Category</i> | | | | | |
|--|-----------|-----------|------------------|-----------------|-------------------|
| Case Condition | OHI | Other | $X^2(df)$ | Sig. | Phi |
| Epilepsy Below Average (<i>n</i> = 30) | 24 (24.2) | 6 (15.4) | | | |
| Epilepsy Very Low (<i>n</i> = 40) | 31 (31.3) | 9 (23.1) | $X^2(3) = 4.931$ | <i>p</i> = .177 | <i>Phi</i> = .189 |
| SCD Below Average (<i>n</i> = 35) | 25 (25.3) | 10 (25.6) | | | |
| SCD Very Low (<i>n</i> = 33) | 19 (19.2) | 14 (35.9) | | | |

Figure 6

Suggested IDEA Eligibility Category



Reasons why participants chose other. Participants were asked to discuss the rationale for their decisions on the fictitious cases provided. For those who did not select eligibility under OHI (*n* = 39), a further examination of the category they selected, the reasons why, and frequency of such reasons was conducted and listed below in table 12.

Table 12*Rationales Provided When Other Health Impairment (OHI) Was Not the Suggested Eligibility Category*

| Case Condition | Suggested IDEA Eligibility Category | Reasons (number of participants) |
|---|--|---|
| Epilepsy Below Average (<i>n</i> = 6) | Multiple disabilities (<i>n</i> = 1) | Lack of progress to intervention, considered OHI and SLD, selected MD due to reading comprehension deficits stemming from epilepsy (1) Due to standard scores being below average (1) |
| | Specific learning disability (<i>n</i> = 5) | Needed more information on epilepsy, selected SLD due to lack of further information and for maximum service delivery (2) |
| | Multiple disabilities (<i>n</i> = 2) | Due to lack of response to interventions, heavily weighed the academic component (2) Needed more information, but thought multiple issues were contributing to lack of progress so selected MD (1) |
| | | Considered both OHI and SLD (1) Unsure if epilepsy was main contributor to academic concerns, selected SLD (1) |
| Epilepsy Very Low (<i>n</i> = 9) | Specific Learning Disability (<i>n</i> = 5) | Wanted to choose OHI as secondary category, but due to forced choice option SLD was primarily selected (1) |
| | | Needed more information, so selected SLD (1) |
| | Intellectual Disability (<i>n</i> = 1) | Considered TBI and Autism, but desired more information to select those; identified SLD due to lack of intervention progress (1) Due to low scores, more information desired (1) |

| | | |
|---|---|---|
| | Traumatic Brain Injury (<i>n</i> = 1) | Incorrect knowledge of epilepsy, believed TBI to be contributing to epileptic seizures so selected TBI (1) |
| Sickle Cell Below Average (<i>n</i> = 10) | Specific Learning Disability (<i>n</i> = 10) | Due to lack of progress to intervention, unsure about sickle cell disease implications, and need for more medical info, selected SLD for maximum service delivery (9) |
| | | No answers provided (1) |
| | | Needed more information regarding sickle cell disease, so selected SLD for maximum service delivery (3) |
| Sickle Cell Very Low (<i>n</i> = 14) | Specific Learning Disability (<i>n</i> = 13) | Due to lack of progress to intervention, selected SLD (9) |
| | | Ability achievement discrepancy, needed more information to proceed with OHI (1) |
| | Intellectual Disability (<i>n</i> = 1) | Due to low scores, selected ID (1) |

Note. OHI = Other Health Impairment, SLD = Specific Learning Disability, MD =

Multiple Disabilities, TBI = Traumatic Brain Injury, ID = Intellectual Disability.

Other eligibility categories selected by case condition. Finally, the frequency of other eligibility categories selected by participants who did not suggest OHI as the eligibility category are included below (*n* = 138). Tables and associated graphs representing the Epilepsy versus SCD and Below Average versus Very Low case conditions are presented along with all four case conditions. See tables 13 and 14, and Figures 7 and 8.

Table 13

Suggested IDEA Eligibility Category

| Case Condition | Intellectual Disability | Multiple Disabilities | Other Health Impairment | Specific Learning Disability | Traumatic Brain Injury |
|----------------|-------------------------|-----------------------|-------------------------|------------------------------|------------------------|
| Epilepsy | 1 (0.7) | 3 (2.2) | 55 (39.9) | 10 (7.2) | 1 (0.7) |
| SCD | 1 (0.7) | 0 (0) | 44 (31.9) | 23 (16.7) | 0 (0) |
| Below Average | 0 (0) | 1 (0.7) | 49 (35.5) | 15 (10.9) | 0 (0) |
| Very Low | 2 (1.4) | 2 (1.4) | 50 (36.2) | 18 (13.0) | 1 (0.7) |

Figure 7

Suggested IDEA Eligibility Category

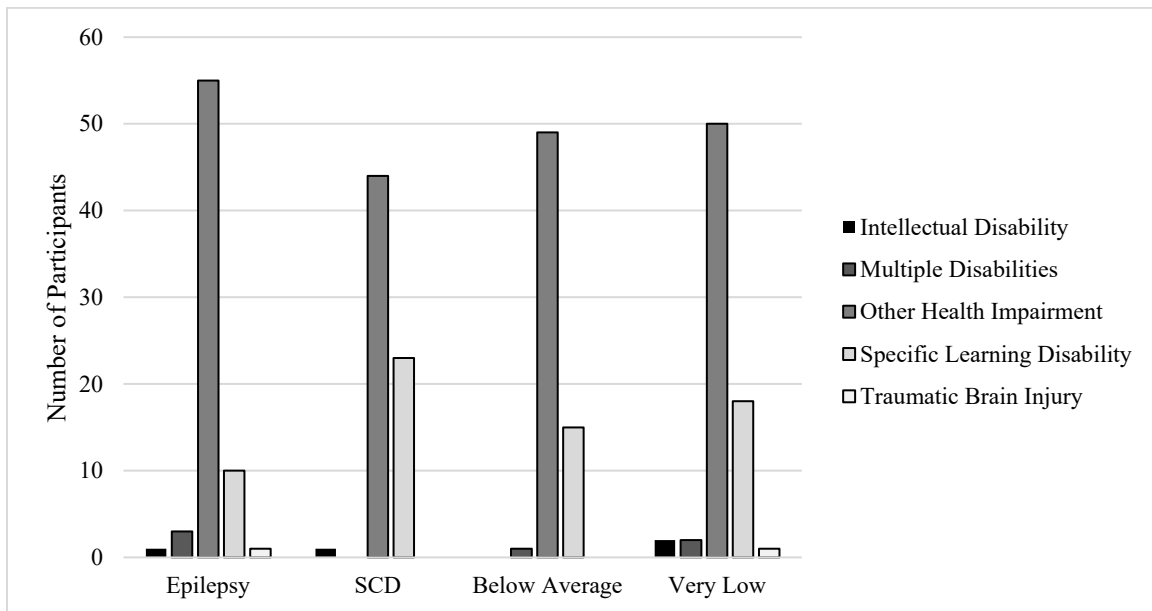


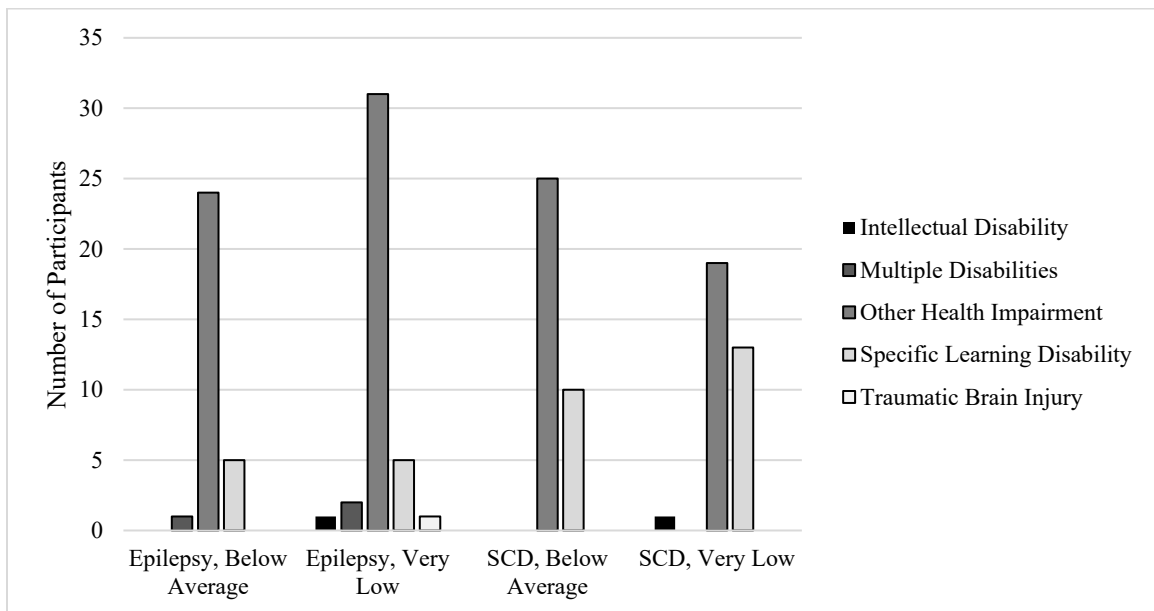
Table 14

Suggested IDEA Eligibility Category

| Case Condition | Intellectual Disability | Multiple Disabilities | Other Health Impairment | Specific Learning Disability | Traumatic Brain Injury |
|---------------------------------------|-------------------------|-----------------------|-------------------------|------------------------------|------------------------|
| Epilepsy, Below Average | 0 (0) | 1 (0.7) | 24 (17.4) | 5 (3.6) | 0 (0) |
| Epilepsy, Very Low SCD, Below Average | 1 (0.7) | 2 (1.4) | 31 (22.5) | 5 (3.6) | 1 (0.7) |
| SCD, Below Average | 0 (0) | 0 (0) | 25 (18.1) | 10 (7.2) | 0 (0) |
| SCD, Very Low | 1 (0.7) | 0 (0) | 19 (13.8) | 13 (9.4) | 0 (0) |

Figure 8

Suggested IDEA Eligibility



Medical Record Information

Research question 4 examined whether school psychologists were more likely to reference additional medical record information concerning students with epilepsy versus those with sickle cell disease. In addition, analyses for this question also examined whether impairment severity contributed to this decision. First, chi-square analyses were conducted to examine whether differences existed among school psychologists who referenced medical record information among the illness type conditions versus the impairment severity conditions. A meaningful difference and small effect were present in the reference of medical record information by illness type ($X^2(1) = 3.412, p = .073, Phi = -.131$) and by impairment severity ($X^2(1) = 5.061, p = .026, Phi = -.159$). Participants in the epilepsy, sickle cell disease, and below average standard score conditions mostly indicated “yes” to referencing medical record information or consultation, which was not consistent for participants in the very low standard score condition. See table 15 and figure 9 for more information.

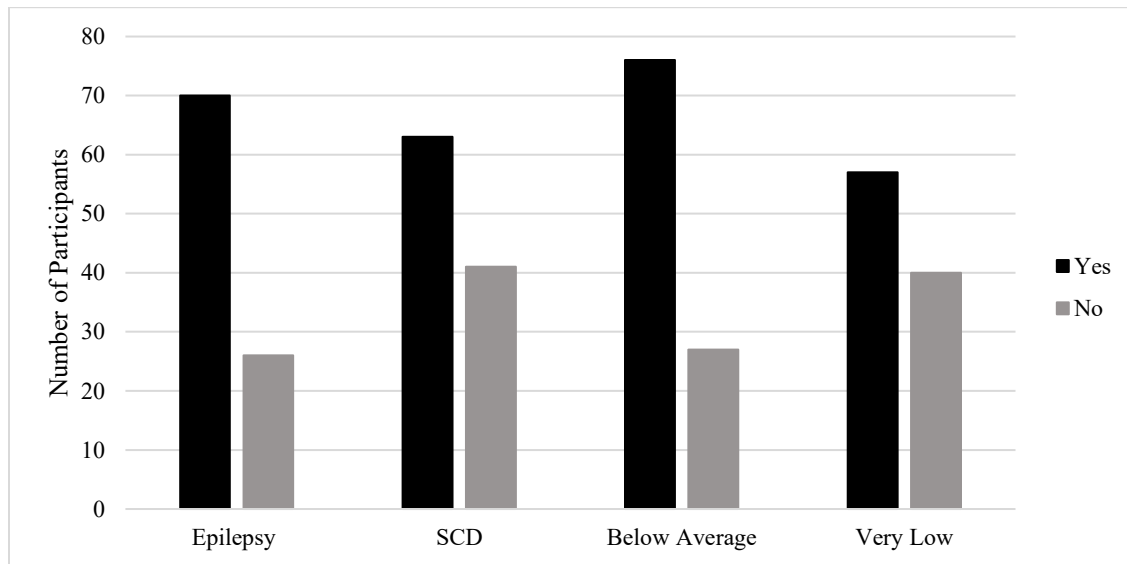
Table 15

Chi-Square Analysis to Determine Differences in Evaluation Plans that Included Referenced Medical Records or Medical Consultation

| Case Condition | Yes | No | $X^2(df)$ | Sig. | Phi |
|--------------------------------|-----------|-----------|------------------|------------|---------------|
| Epilepsy ($n = 96$) | 70 (52.6) | 26 (38.8) | $X^2(1) = 3.412$ | $p = .073$ | $Phi = -.131$ |
| SCD ($n = 104$) | 63 (47.4) | 41 (61.2) | | | |
| Below Average ($n = 103$) | 76 (57.1) | 27 (40.3) | $X^2(1) = 5.061$ | $p = .026$ | $Phi = -.159$ |
| Very Low ($n = 97$) | 57 (42.9) | 40 (59.7) | | | |

Figure 9

Evaluation Plans that Included Reference to Medical Records or Medical Consultation



All four case conditions were compared using a chi-square analyses to determine whether differences persisted. Within epilepsy below average scores case condition, 27.8% ($n = 37$) participants stated they would reference medical record information, and 17.9% ($n = 12$) stated no. Among epilepsy very low scores case condition, 24.8% ($n = 33$) participants stated they would reference medical record information, and 20.9% ($n = 14$) stated no. In the SCD below average scores case condition, 29.3% ($n = 39$) participants stated they would reference medical record information and 22.4% ($n = 15$) stated no. Amongst the SCD very low scores case condition, 18.0% ($n = 24$) participants stated they would reference medical record information and 38.8% ($n = 26$) stated no. Chi-square analyses determined a small meaningful difference and effect present ($X^2(3) = 10.552, p = .014, phi = .230$). See table 16 and figure 10 for more information.

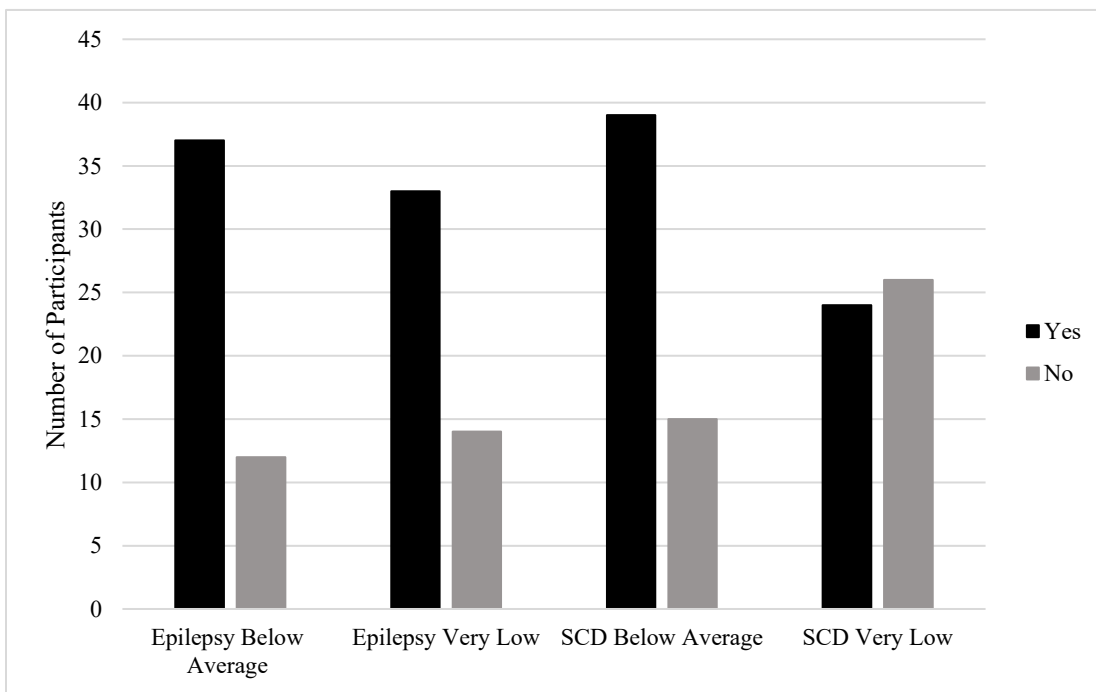
Table 16

Chi-Square Analysis to Determine Differences in Evaluation Plans that Included Reference to Medical Records or Medical Consultation

| Case Condition | Yes | No | $X^2(df)$ | Sig. | Phi |
|--|-----------|-----------|-------------------|-----------------|------------|
| Epilepsy Below Average (<i>n</i> = 49) | 37 (27.8) | 12 (17.9) | $X^2(3) = 10.552$ | <i>p</i> = .014 | Phi = .230 |
| Epilepsy Very Low (<i>n</i> = 47) | 33 (24.8) | 14 (20.9) | | | |
| SCD Below Average (<i>n</i> = 54) | 39 (29.3) | 15 (22.4) | | | |
| SCD Very Low (<i>n</i> = 50) | 24 (18.0) | 26 (38.8) | | | |

Figure 10

Evaluation Plans that Included Reference to Medical Records or Medical Consultation



Summary

This study examined school psychologists' evaluation planning for students with varying chronic illnesses and level of impairment. All school psychologist participants were presented with a fictional case and then asked to provide domains of functioning

they wish to include in their evaluation plan for their student if they were evaluating them. An independent samples *t*-test and a 2x2 factorial ANOVA were conducted to examine this first research question. A small main effect was present for chronic health condition and for impairment severity. No interaction effects were found.

First, the study found that participants presented with the epilepsy case condition indicated evaluating more domains of functioning compared to the sickle cell disease condition. Similarly, participants in the below average standard score case condition indicated evaluating more domains of functioning compared to the very low standard score case condition. No interaction effects were found. Overall, the total domains of functioning participants included in their evaluation plans were small.

This study also examined whether participants recommended special services at differing rates for students with varying chronic health condition and impairment severity. A chi-square analysis was employed. Most participants recommended special services under the IDEA, but not all. This effect was not a meaningful difference. Next, this study also explored which IDEA eligibility category was most frequently recommended. A chi-square analysis was utilized, and no meaningful differences were found. Regardless of chronic health condition and impairment severity, most participants recommended special services under Other Health Impairment (OHI). Lastly, this study also examined whether participants referenced medical record information. Chi-square analyses were utilized. Participants in all but the sickle cell disease very low standard score case condition all mostly indicated referencing medical record information or consulting with a medical provider as a part of their evaluation plans. In the next chapter, a discussion and analyses of these results are presented.

Chapter 5

School psychologists are practitioners with expert training in addressing the psychoeducational implications of childhood disorders in the educational setting. This notion extends to students with pediatric chronic illnesses as research implicates neurocognitive, academic, behavioral, and social functioning difficulties that persist into adulthood (Compas et al., 2017; DuPaul et al., 2017; Harmann et al., 2020; Riccio et al., 2014; Wodrich et al., 2020). Professional organizations, such as NASP and APA, call for school psychologists to become more knowledgeable regarding the effects of pediatric chronic illnesses and their implications for psychological practice across settings, including schools (APA, 1998; NASP, 2020; Schmitt et al., 2019).

Research on the psychoeducational and neuropsychological consequences of pediatric chronic illnesses, such as epilepsy and sickle cell disease, illustrates the need for school psychologists to conduct comprehensive evaluation planning and assessment of students with such illnesses (Benno et al., 2021). Reviews of the literature indicate that deficits associated with epilepsy and sickle cell disease may occur across the seven domains of functioning that should be considered within a comprehensive psychoeducational evaluation (Bills et al., 2019; Brandling-Bennett et al., 2003; Castro & Viana, 2018; McGeehan, 2018; Prussien et al., 2019; Salinas et al., 2018; Schraegle & Titus, 2016; Wills et al., 2010; Wodrich et al., 2020). This study examined school psychologists' understanding of epilepsy (e.g., a neurologically rooted disorder) and sickle cell disease (e.g., a non-neurologically rooted disorder) as it relates to their decision-making for psychoeducational evaluation planning and special service eligibility decisions.

Evaluation Plan Functional Domains and Follow-up Analyses

The first research question asked if the evaluation plans of school psychologists differed in the number of domains assessed for a neurologically rooted (epilepsy) versus a non-neurologically rooted (sickle cell disease) disorder. After being provided a fictional case, school psychologist participants provided their evaluation plans, which the primary researcher coded. The primary researcher then calculated the total number of domains out of seven options (e.g., processing speed, verbal/language skills, nonverbal/spatial skills, memory/language, executive functioning/attention, motor skills, and adaptive skills). The total number of domains are options supported by previous literature (Benno et al., 2021; Miller & Maricle, 2019) and are common domains of evaluation in school neuropsychological reports. Important to note and to fully understand the implications of this study, Intelligence Quotient (IQ) scores, academic achievement, and social-emotional/behavior were provided to participants in the case study and therefore were not coded in an effort to fully center on how many typical neuropsychological domains were represented on the evaluation plans.

This study found that participants in the epilepsy case conditions provided more domains of functioning in their suggested evaluation plans compared to those in the sickle cell disease case conditions, though the effect was small. This finding supported the proposed hypothesis that the participants in the epilepsy case conditions would have more domains of functioning represented in their evaluation plans. It is important to remember that the effect was small as the average number of domains on the epilepsy evaluation plans was 1.44, while the number of domains on the SCD evaluation plans was 1.12. That is a difference of only 0.32 domains of functioning.

Given that the participants in this study included a relatively low number of neuropsychological domains on their evaluation plans, this study then examined which domains were more frequently present. Overall, school psychologists consistently indicated that they would evaluate attention and executive functioning followed by adaptive skills, memory and learning, verbal and language skills, motor skills, processing speed, and nonverbal and spatial skills in descending order. The results showed that illness type (e.g., epilepsy vs. sickle cell disease) and severity of impairment (e.g., 85 standard scores vs. 76 standard scores) did relate to how many neuropsychological and functional domains school psychologist participants included within their evaluation plans. However, the overall number of domains recommended by all participants was smaller than what the literature suggests should be present.

In addition, this study also examined if school psychologist evaluation plans differed across case conditions with differing impairment severity. Participants in the below average standard score case condition provided 1.43 domains of functioning. In contrast, those in the very low standard score case condition indicated 1.12 domains of functioning on their evaluation plans. This was surprising because the reports of lower functioning could have resulted in an expanded evaluation plan to understand where there are areas of impairment. One hypothesis for this result is that the school psychologists focused on basic evaluation components to identify an Intellectual Disability or a learning disorder and more heavily relied on cognitive and achievement standard scores presented in the fictional case, rather than conduct an expanded evaluation. In other words, the school psychologists may have believed enough data were present to determine eligibility

in any category and not focused on determining all areas of suspected disability as is required by state and federal special education codes.

When combined (e.g., 85 standard score epilepsy case, 76 standard score epilepsy case, 85 standard score sickle cell case, and 76 standard score sickle cell case), there were no interaction effects in the number of domains of functioning included in participants' evaluation plans. In conjunction with impairment severity, illness type did not influence the school psychologist participants including more or fewer domains of functioning in their plans. Independently, illness type and impairment severity produced main effects in the number of domains included in the proposed evaluation plans. On average, school psychologists indicated between 1-2 domains of functioning, which did not manifest in interaction effects.

There may be many reasons why school psychologists in this study provided shorter evaluation plans. Perhaps one reason is a result of lack of knowledge of the broad functional impairments associated with both medical conditions, despite extensive literature support. This study purposefully surveyed practicing school psychologists who may not be actively involved in their local, state, or national organizations. It is unknown whether the majority of the study sample appropriately participates in continuing education efforts to update their pre-existing knowledge on evaluation and assessing for all areas of suspected disability in students with medical conditions such as epilepsy and sickle cell disease.

Another reason posited may include the notion that school psychologists in this study did not know to construct a broader evaluation plan that assesses for all areas of possible disability as a response to the survey questions asked. Many times, in practice,

and with high caseloads of students in their districts, school psychologists have to make quick educated decisions on how to pursue an evaluation with students. It is unclear whether participants in this study truly know to evaluate for all suspected areas of disability or whether it was appropriate to include in their evaluation plan when asked of them in this study. Lastly, school psychologists in this study may have believed that the IQ, academic achievement, and social-emotional/behavioral information provided to them in this study was enough information to evaluate all possible areas of disability and base their eligibility decisions and recommendations. Although there were instances of school psychologists including domains of functioning, overall, the plans provided were minimal.

Interestingly, across most participants, the recommended evaluation plans mainly included inclusion of attention and executive functioning measures. Consistent with previous studies, attention and executive functioning skills are higher-level components that benefit academic progress and growth for students. Cainelli and colleagues (2021) found that students with epilepsy may have more deficits in attention and executive functioning abilities. Moreover, these deficits, along with overall cognitive impairments, may differ in the type of epileptic disorder a student may have been diagnosed with, along with the age of onset (Cainelli et al., 2021; Rantanen et al., 2021). Another study found that students with epilepsy were more susceptible to executive functioning deficits compared to typically functioning peers (Krivitzky et al., 2015).

This study also employed follow-up chi-square and effect size analyses to examine whether participants included particular domains of functioning in their evaluation plans dependent on illness type or impairment severity. Since this is a follow-

up analysis, the analysis examined group comparisons on all possible domains denoted by the RIOT framework (Christ & Aranas, 2014). As a reminder, the RIOT framework (e.g., Review, Interview, Observation, Test) is commonly utilized by practicing school psychologists as their evaluation plans are carried out. Participants in the SCD case condition indicated they would use more interview methods. In contrast, the participants in the epilepsy case condition indicated use of more cognitive assessment and more explicitly evaluating for memory and learning. These differences may result from prior knowledge of illness type in this participant sample. The school psychologist participants in this study may have less understanding of sickle cell disease and the related possible psychoeducational implications. This dearth of knowledge on sickle cell disease and psychoeducational implications may affect the special services school psychologists recommend for students with sickle cell disease to receive (Mayes et al., 2011).

On the other hand, participants in this study may have had adequate knowledge of epilepsy and the related brain and cognitive-based implications that may result. This prior knowledge may support why participants in this study recommended using more cognitive and memory-based assessments in the epilepsy case. This notion is supported by literature, as Krivitzky and colleagues (2015) found that children with various medical conditions, including epilepsy, have possible deficits related to working memory. The cognitive impact and pathology of brain-based illnesses, like epilepsy, are known to many school psychologists. Prior knowledge may have encouraged the school psychology participants in this study to include cognitive and memory and learning-based assessments in their evaluation plans.

The follow-up analyses also examined whether differences existed across domains of functioning indicated in participants' evaluation plans across the impairment severity conditions. Similar to the illness-type follow-up analyses, as mentioned previously, chi-square and effect size analyses were employed to explore these relationships. More participants in the below average standard score case condition indicated that they would utilize more medical documentation and consultation and evaluate for academic skills. Participants in the below average standard score case condition may require more consultation and evaluation of students' academic skills because the scores may not be obviously related to a definitive eligibility decision. Participants in the very low standard score case condition stated that they would evaluate more for motor and adaptive skills, perhaps in pursuit of exploring Intellectual Disability as an eligibility category. However, Buelow et al. (2012) does support the need to evaluate adaptive functioning skills in students with epilepsy, regardless of cognitive (intellectual) impairment level. Potential functional deficits existed across all epilepsy groups evaluated in this study. This notion extends to students with other chronic illnesses, like sickle cell disease, which may have a broader range of implications for performance in school yet more difficulty obtaining school-based accommodations or services (Mayes et al., 2011).

Special Service Recommendations by Condition

Research question two asked whether special service recommendations differed across disorder type and impairment severity groups. Participants could select recommendations for no special services, 504-plan, or formal special services under IDEA. The hypotheses for this research question were three-pronged. The first hypothesis

stated that participants within the very low standard score groups would be recommended special service eligibility at a higher rate than those within the below average standard score groups. The following hypothesis stated that participants with the epilepsy and very low standard score condition would recommend formal special services at a higher rate than those within the SCD groups and below average standard score groups. The last hypothesis stated that participants within the SCD and below average standard score group would recommend Section 504 plans at a higher rate than participants within the epilepsy and very low standard score group.

These hypotheses resulted from the fact that participants likely understand the possible neuropsychological implications associated with a brain-based disorder like epilepsy. In understanding this association, participants may be more likely to recommend formal special services under the IDEA category of OHI for a student with epilepsy, regardless of impairment severity. In addition, when the added component of severe impairment is present (e.g., denoted by very low standard score in this study), participants may be more likely to consider formal special services under IDEA due to the overall very low impairment.

It is unknown whether participants would recommend formal special services for the SCD and below average standard score case condition. Participants likely have less prior knowledge of SCD and possibly associate the impairment level scores as a function of a learning-based disorder and not a chronic illness. Illustrated by previous literature, students with SCD had more barriers to accessing care within the school environment and misunderstanding their behaviors. Similarly, Petersen and colleagues (2005) found that very few students with SCD that demonstrated well-below-average performance on

cognitive and achievement measures received an IEP. SCD may be misunderstood by school psychologists in practice, even though the literature shows apparent neuropsychological and functional deficits associated with SCD (Bills et al., 2019; Brandling-Bennett et al., 2003; Castro & Viana, 2018; Ghafuri et al., 2019; Prussien et al., 2019; Schatz et al., 2009; Wills et al., 2010).

Overall, this study found no meaningful differences in special service recommendations across the case conditions. But when impairment severity is the focus, interestingly, more participants within the very low standard score case condition indicated that they would select special services under IDEA, which supports the first hypothesis. Students who receive special services under IDEA gain the most support and specially designed educational instruction to help their learning in school and accommodate their environment to fit their individual needs and those identified by their disability (IDEA, 2004).

Most practicing school psychologists can argue that when students perform within a very low standard score range across measures of psychoeducational functioning, these students typically have some challenges within the school environment and could benefit from school-based special services. Participants in this study indicated referencing response to intervention (RTI), multi-tiered systems of support (MTSS) systems, and lack of intervention progress as a reason for recommending the fictional case student for special services under IDEA. It is also important to note that all participants in this study read identical fictional cases, the only difference being the type of illness present and the severity of the standard scores in the presented psychoeducational measures. Ideally, all participants should have recommended special services under IDEA based on the

presented information and the known educational impact of the student. The fact that this decision differed across participants, albeit a non-meaningful statistical difference, raises concerns about how determinations made for students with similar cognitive and psychoeducational profiles may differ due to their illness.

Recommended Special Education Eligibility Categories

Research question three in this study explored which formal special service category under IDEA school psychologist participants recommended, regardless of impairment severity. The hypothesis stated that school psychologist participants most likely would accurately recommend special service eligibility under the category of Other Health Impairment (OHI) more than any other category. According to IDEA, students with chronic illnesses like epilepsy and sickle cell disease that demonstrate a lack of progress to intervention, significant needs, and adverse educational impact are eligible for receipt of formalized special services under the IDEA category of OHI (Federal Register, 2006, p. 46757). This study showed that most participants recommended eligibility for services under the IDEA category of OHI, which supports the proposed hypothesis. In further examination, minor differences were present across the illness type groups. More participants within the SCD case condition selected non-OHI eligibility designation, whereas those within the epilepsy case condition most often selected OHI.

As predicted, participants in the epilepsy case conditions may have employed anchoring heuristics in making their decisions. By definition, anchoring heuristics are when an individual forms hypothesis based on their initial perceptions of the topic (Davidow & Levinson, 1993; Wilcox & Schroeder, 2014). For instance, particular to this study, participants may have anchored their decision to select OHI as the most

representative IDEA category for a student with epilepsy due to pre-existing and widely known knowledge of epilepsy and its neuropsychological and brain-based impacts on functioning. Interestingly, even though participants in the epilepsy case conditions most often selected OHI, there were few subsets of respondents who selected other classifications such as Traumatic Brain Injury (TBI) or Intellectual Disability (ID). Perhaps for some school psychologists, when presented with a known brain-based disorder such as epilepsy, their pre-existing knowledge of the condition leads them to utilize anchoring heuristics to create evaluation plans that solely target cognitive and adaptive processes known to be a result of brain-based disorders. Although the techniques employed may be comprehensive and evaluating for all areas of suspected disability, the overall classification of students with epilepsy under a non-OHI classification is incorrect and can mislead the multi-disciplinary team when implementing appropriate school-based services. It is important the school psychologists be vigilant of their pre-existing knowledge and schemas in evaluation planning and eligibility decisions for students with complex medical presentations.

Contrarily for the SCD cases, most often the designation recommended was SLD (Specific Learning Disability). For instance, some participants indicated recommending a SLD classification even though they recognized a medical disorder was present in the SCD groups. It can be postulated that the reasoning behind recommending SLD was due to ensuring services were provided to some extent, even if it was through classifying the student under the SLD category. Other participants selected SLD for the SCD case condition due to the noticeable reading challenges present in the fictional case description, and thereby disregarding the SCD and medical factors that may have

influenced current functioning. Although not a meaningful difference, this difference trended toward significance. The students' level of impairment did not influence school psychology participants' decisions on the eligibility category.

This study also employed a qualitative examination of participants' decision-making as a follow-up analysis to further explore this finding. Participants presented their reasoning behind their special service eligibility recommendations in the presented fictional case. More specifically, their reasoning warranted a further look into the decisions made by school psychology participants who recommended non-OHI. Overall, school psychologists more often selected a specific learning disability (SLD) eligibility designation instead of other health impairment.

Participants in this study were more comfortable identifying the SLD designation, perhaps due to the frequency with which this category is identified in everyday practice. When considering a medical condition, participants may not have felt comfortable selecting OHI because they may have felt it was out of their purview and scope of practice. Many participants selected SLD, even though consideration of OHI was within their case conceptualization and decision-making process. In practice, school psychologists are more comfortable with identifying learning-related challenges among students in school. Although school psychology training programs equip practitioners with necessary skills to classify students with educational challenges that are a result of non-learning-based disorders, practitioners may not have true comfortability in pursuing such decisions. For instance, per most participant's responses in this study, there is an acknowledgement that the fictional student presented to them has difficulties beyond a typical learning-based disorder. However, the distinction between the epilepsy and SCD

cases was a result of participants in the SCD cases needing more information primarily related to the implications of SCD prior to making classifications and decisions that were above and beyond the presence of a learning-based disorder. Additionally, participants indicated supporting the need for special services in this fictional case based on a lack of progress from intervention; however, the lack of data and knowledge on symptoms related to the illnesses, particularly sickle cell disease, contributed to their decision to select SLD. Overall, the participants who chose any other designation that was not OHI most often wanted more information before making their decision.

It can be postulated that practicing school psychologists who deal with heavy caseloads and, positively, expertise in dealing with a wide range of disorders in children may rely heavily on inductive reasoning processes in creating evaluation plans and making eligibility decisions. For instance, there were a number of participants in this study who provided short evaluation plans with minimal domains of functioning included, yet their recommendation for eligibility of special education services was accurate in identifying OHI as the primary disability category. On the other hand, this study provided evidence of many practitioners possibly utilizing more deductive reasoning techniques in making their decisions for the provided case. Participants who recommended eligibility for special education under non-OHI categories, often stated wanting more information about the student prior to making a definite decision. Some participants even mentioned considering OHI as a possible designation, but without further information they did not feel comfortable in moving forward with the OHI classification. The best course for making eligibility related decisions is when the practitioner utilizes a combination of both inductive (learned experiences and practical

information) and deductive (data and systematic methodology usage) clinical reasoning processes (Wilcox and Schroeder, 2015).

Follow-up Analysis Regarding Reference to Medical Records

Lastly, this study examined whether participants referenced medical record information at differing rates by case condition. The hypothesis stated that school psychologist participants within the epilepsy groups, regardless of impairment severity, would more often reference medical record information at higher rates than SCD groups. Meaningful differences were present as a result of these analyses. First, participants in both epilepsy groups indicated referencing medical record information or consulting with a provider. This notion supports the hypothesis with regards to the epilepsy case conditions. Secondly, participants in the SCD below average group indicated referencing medical record information at similar rates to those across both epilepsy groups. Thirdly, participants in the SCD very low group indicated not referencing medical record information at similar rates to the SCD below average and epilepsy groups. These results partially support the overall hypothesis. The SCD very low standard score case condition participants referenced medical records/consultation information at a lower rate than the rest of the groups. As discussed previously, perhaps the participants in the sickle cell disease very low standard score case condition attributed the fictional case student's performance to a learning-based disorder and not one warranting medical consultation.

School psychologists are encouraged to consult with students' medical providers when chronic illness may be a potential presenting problem as to why students may have difficulties in school. Research supports the notion that school psychologists should consult with medical providers to aid in the formulation of potential hypotheses prior to

issuing their clinical judgments on a case (Drotar et al., 2004; DuPaul et al., 2017; Shapiro & Manz, 2004). School psychologists are in a unique position to utilize their expertise in consultation and collaboration to work with medical providers and the school-based team to advocate for the needs of students with chronic illnesses and medical needs (Glaser & Shaw, 2014).

Implications of Study

This study sheds light on how currently practicing school psychologists across the nation engage in evaluation planning and eligibility decisions for students with chronic illnesses. School psychologists should construct scientifically-supported evaluation plans and engage in higher-level decision-making processes to ensure that their plans and evaluations are comprehensive and encompass all indicated domains of functioning per their students. Although this study did not show any meaningful differences in the number of domains indicated in a school psychologist's evaluation plan – aside from IQ, academic achievement, and social-emotional/behavior –regardless of illness type and impairment severity, the overall number of domains indicated was abysmally small. It is known that children with chronic illnesses have deficits in a variety of neuropsychological and psychoeducational domains of functioning (Benno et al., 2021; Compas et al., 2017; DuPaul et al., 2017; Harmann et al., 2020; Riccio et al., 2014; Wodrich et al., 2020). School psychologists must consider all possible domains of functioning in their evaluation plans and recommendations for students' progress in school.

School psychologists recognize that when a lack of response to intervention is present and students exhibit functional deficits that impact their performance in school,

impacted students should receive special education services under the IDEA category of OHI. However, there were still some participants who selected no services. There was a discussion on why participants did not select OHI and, most often, selected SLD.

Participants may have made their decisions due to a lack of knowledge regarding chronic illnesses and the need for more data from other sources. Many participants in this study required more information to pursue adequate deductive reasoning cognitive processes in making their eligibility decisions. Further training and continuing education for practicing school psychologists on the neuropsychological domains of functioning indicated by chronic illnesses are warranted, particularly for conditions with unclear pathology (e.g., non-neurologically based illnesses like sickle cell disease).

Previous studies have found that school psychology practitioners should recognize a wide range of psychoeducational implications for children with sickle cell disease. However, despite these implications, few students receive appropriate school-based support. One study found that many parents of students with sickle cell disease have school-based challenges related to their academic progress, yet they have difficulty obtaining the appropriate accommodations (Mayes et al., 2011). Another study found that half of the parents of children with sickle cell disease in the study sample reported concerns. However, only 27% of those children received appropriate school-based support (Petersen et al., 2005).

Our study found that for the SCD very low standard score case condition, school psychologists considered the eligibility of services more often under the SLD category rather than OHI. Although this decision ensures students are still receiving some school-based support, by misidentifying the eligibility category, students may not receive the

proper support in school. Students classified under OHI may receive more school-based services that recognize their medical conditions as the primary contributor to their performance in school, not a learning-based disorder.

Participants in this study may have employed cognitive heuristics in their decision-making process. Participants were provided brief information and were required to base their decisions based on the interplay of this information and their previous knowledge of similar cases. Although many participants, particularly in the SCD cases, may have employed multiple hypotheses supporting a possible OHI classification, the availability of the information presented to them ultimately influenced their decision to recommend non-OHI related classifications. As defined, an availability heuristic is a construct that represents how individuals make decisions based on the ease of information presented to them (Davidow & Levinson, 1993; Wilcox & Schroeder, 2014).

Lastly, school psychologists, for the most part, did state they would seek medical record information or consult with a provider for most cases. However, for the SCD very low standard score case condition, more participants stated they would not seek medical information. The reason for this is not clear. Participants may confuse sickle cell disease more often as a learning-based disorder rather than a health condition. Perhaps participants in this particular group utilized representative heuristic techniques as they equated this case to one of a learning-based disorder, and not one warranting medical consultation. Representative heuristics is a decision-making construct that exists when an individual may employ a pre-existing schema about a student's condition (Davidow & Levinson, 1993; Wilcox & Schroeder, 2014). Participants may have held pre-existing schemas regarding their understanding of SCD. This notion calls for more education and

information to school psychologists on the medical and school-based implications of sickle cell disease, as it may not be as known as epilepsy.

Study Limitations

This study employed survey research. Although the fictional cases were developed with expert school psychologists and faculty members, one cannot be sure that the participants accurately interpreted the cases and instructions as intended by the researcher. For instance, it is not clear that the school psychologist participants had a shared understanding of what is meant by an evaluation plan. As indicated by Miller and Maricle (2019), an evaluation plan lists specific domains of functioning and often particular test instruments to measure that domain. In this study, some participants provided broad responses when asked to provide an evaluation plan. For example, some participants indicated that they would evaluate for the presence of a specific learning disability rather than list specific domains of functioning. It is hard to know if participants were purposeful in leaving out particular domains of the evaluation plan or if they responded without enough specificity to indicate what they would do in practice. Additionally, a limitation in this study's methodology is with the presentation of information in the survey. Participants were provided with information about the case particularly regarding the student's IQ, academic achievement, and social-emotional/behavior profile. This presentation of information may have primed participants when constructing their evaluation plans.

School psychologists may also not have a shared idea of how comprehensive an evaluation plan might be in practice. An effective evaluation plan in this study was conceptualized as a plan that includes all relevant neuropsychological and functional

domains that may assist the school-based team in determining whether students' school performance is related to their disability or chronic illness (Benno et al., 2021; Miller & Maricle, 2019). In this study, particular domains considered for coding include attention and executive functioning, adaptive skills, memory and learning, verbal and language skills, motor skills, processing speed, and nonverbal and spatial skills. Although not required, we anticipated participants would give us specific domains of functioning to code. Participants did provide specific domains in their evaluation plans to varying levels of specificity, along with specific test instruments which measure certain neuropsychological and functional constructs.

This study purposefully recruited school psychologists from across the nation that were not necessarily members of the National Association of School Psychologists or state-level associations and possibly more likely to engage in high-level continuing professional development. The present sample of participants was representative of the field in that most respondents were White females and those with EdS degrees. Another future direction is to consider whether any cultural or racial differences presented in cases could produce differences in the results. This study employed a standardized case whereby the student was of the same age and race (e.g., 8-year-old African American male). Given that the majority of the sample population was of a differing cultural background, it is unknown how these factors, and possible implicit biases, influenced the responses to the fictional case. Additionally, the decisions participants made were based on limited information regarding a child they have not met and have not personally evaluated. School psychologists' hypotheses and subsequent evaluation decisions would

be more comprehensive with sufficient rapport and direct interaction with a child and their support systems.

Future Directions of Investigation

Future investigation can consider the decision-making process involved in school psychological evaluation for other specific chronic illnesses indicated within the OHI designation that may not have brain-based implications. Even though this study employed two illnesses that have known adverse educational implications for students in school, school psychologists still only stated wanting to evaluate a few specific neuropsychological domains of functioning in their evaluation plans. If presented with different chronic illnesses that may have neurological impacts, the result of this study may have produced differing results, with more participants choosing a learning-based disorder as the primary reason the student is functioning low. Similarly, future studies can employ methodologies where the standard scores in the fictional cases were at different levels.

Future studies or replications of this study can employ differing methodology techniques. For example, by providing participants with a checklist of all possible domains of functioning, there may be more of an opportunity for participants to consider all possible domains implicated per each case. Another methodology that future studies can employ, may include the use of a focus group with school psychology participants. By asking structured interview questions about current evaluation planning techniques for students with medical needs, school psychologists may provide more insight into their decision-making processes for such cases.

Finally, this study looked at the frequency with which medical records or medical consultation was listed on evaluation plans. Future studies might examine the frequency and modality of school psychologists' consultation with medical professionals. Additionally, future studies might seek to capture the types of information school psychologists seek from their student's medical team, as well as types of information a student's medical teams seeks from their patient's school. This information may inform training for school psychologists and medical professionals regarding effective cross-disciplinary consultation.

Summary

School psychologists are called upon by professional organizations, such as NASP and APA, to become more knowledgeable about the effects of pediatric chronic illnesses and the deficits associated with school-based performance (APA, 1998; NASP, 2020; Schmitt et al., 2019). Extant research supports the need for school psychologists to conduct comprehensive evaluation planning and assessment of students with chronic illnesses (Benno et al., 2021). Many deficits are associated with illnesses like epilepsy and sickle cell disease (SCD), which differ in pathology. Given this notion, this study explored four research questions to understand how school psychologists proceed with evaluation planning for students with chronic health conditions and varying impairment severity.

This study first examined differences in the recommended evaluation plans by school psychologist participants in this study. All participants were assigned, a priori, to one of four conditions: epilepsy below average standard score condition, epilepsy very low standard score condition, SCD below average standard score condition, and SCD

very low standard score condition. Participants within the epilepsy groups collectively provided more domains of functioning within their evaluation plans compared to those within the SCD groups, which supported the initial hypothesis. Similarly, participants within the below average standard score group provided more domains of functioning within their evaluation plans compared to those within the very low standard score groups. Overall, the effects were small as only 1-2 domains of functioning, on average, were provided across all participants in this study.

Implications of this finding shed light on the need for school psychologists to engage in critical decision-making and more comprehensive evaluation planning for students with chronic illnesses. Children with chronic illnesses have deficits in a variety of neuropsychological and psychoeducational domains of functioning (Benno et al., 2021; Compas et al., 2017; DuPaul et al., 2017; Harmann et al., 2020; Riccio et al., 2014; Wodrich et al., 2020), which calls for school psychologists to consider all possible domains of functioning in their evaluation plans and recommendations for students' progress in school.

This study then explored whether school psychologist participants in the different conditions recommended special services at differing rates. Participants recommended no special services, provision of a 504-plan, or recommendation of formalized special services under IDEA. No statistically meaningful differences were present across the case conditions in special service recommendations. However, more participants within the very low standard score condition recommended formal special services under IDEA. Although most participants recommended some services (e.g., 504-plan or formalized special services), some participants recommended no special services. Given that the

cases presented to all participants were identical, aside from the illness type and impairment severity of the fictional student, all participants should have recommended formalized services under IDEA. This finding calls for further training and continuing education for practicing school psychologists to understand better the deficits associated with chronic illnesses and increased consideration of formalized special services for these children.

Next, this study examined which formal special service category under IDEA was most often recommended. It was hypothesized that most participants would select special services under the IDEA category of OHI. The results of this study corroborated this hypothesis. Interestingly, although a non-meaningful difference, minor group differences existed across the illness-type groups. Participants within the epilepsy groups most often recommended services under OHI, whereas more participants within the SCD selected non-OHI designations. Through follow-up analyses, it was discovered that participants with the SCD case condition who selected a non-OHI designation most often selected a Specific Learning Disability (SLD) designation. Reasons they provided to support the selection of SLD include a lack of data and knowledge of SCD symptoms. However, a lack of intervention and progress presented in the case supported their recommendation of the primary concern encompassing a learning-based disorder.

Lastly, this study examined whether participants referenced medical record information at different rates by case conditions. Participants in the epilepsy below average standard score case, epilepsy very low standard score case, and SCD below average standard score case all primarily referenced medical record information. Interestingly, participants within the SCD very low standard score case condition

inconsistently recommended referencing medical record information. Again, this distinction may support the notion that participants in the SCD very low standard score group attributed the fictional students' lack of progress in school to a learning-based disorder and not one related to their medical condition. As such, currently practicing school psychologists should make an active effort to understand the possible implications and deficits associated with chronic illnesses like SCD.

Limitations of this study include the use of survey research and possible misinterpretation of the questions and cases presented to the participants. In addition, this study employed a standardized case example that controlled for the student's age and race (e.g., 8-year-old African American male). Although efforts were made to survey a diverse sample of participants from varying backgrounds and degrees, the majority of participants that completed the survey were White females and those with EdS degrees. Future studies can further investigate whether cultural differences may influence school psychologists' formulation of evaluation plans for students with chronic illnesses. Further, if participants were presented with different chronic illnesses, not epilepsy or SCD, perhaps the results would differ. Finally, future studies can examine the home-school-community connection for students with chronic illnesses and investigate further the communication efforts of school psychologists and medical professionals.

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Appendix A

Survey

Participants will first be presented with either case 1, 2, 3, or 4.

Case 1

“A teacher approaches you with concerns about a young student in their classroom. They report to you that this student, Adam, is inattentive in class and appears sleepy most days. He is generally kind to others, but he may exhibit frustration with completing tasks that require a lot of focus on some days. When having difficulty focusing, the teacher states that Adam usually stares at his paper outside through the window and at the front of the room. His teacher notes that they frequently have to call on Adam in class and redirect him to the lesson. Academically, Adam’s teacher states that he is a B- and sometimes C-student. Adam was reported to have a small group of friends with whom he is frequently seen hanging out in the hallways. Due to behavioral and academic concerns, a comprehensive psychoeducational evaluation was conducted on Adam. The following information is obtained due to a thorough records review and comprehensive evaluation of cognitive and achievement assessments.

Background Information:

Adam is an 8-year-old African-American male in the 2nd grade. He currently resides with his mom, dad, and younger brother at home. His mother states that Adam has met all of his developmental milestones, like walking and talking, within normal limits. He is noted to have seasonal allergies, epilepsy in the form of absence seizures, and occasional eczema.

Psychoeducational Information:

You administer various cognitive, achievement, and social-emotional measures assessing Adam's overall functioning. All of the relevant data support that Adam generally scores below average (SS = 85) on cognitive and academic measures and has elevated ratings on social-emotional areas such as depression, anxiety, attention problems, and learning problems.”

Case 2

“A teacher approaches you with concerns about a young student in their classroom. They report to you that this student, Adam, is inattentive in class and appears sleepy most days. He is generally kind to others, but he may exhibit frustration with completing tasks that require a lot of focus on some days. When having difficulty focusing, the teacher states that Adam usually stares at his paper outside through the window and at the front of the room. His teacher notes that they frequently have to call on Adam in class and redirect him to the lesson. Academically, Adam’s teacher states that he is a B- and sometimes C-student. Adam was reported to have a small group of friends with whom he is frequently seen hanging out in the hallways. Due to behavioral and academic concerns, a comprehensive psychoeducational evaluation was conducted on Adam. The following information is obtained due to a thorough records review and comprehensive evaluation of cognitive and achievement assessments.

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Psychoeducational Information:

You administer various cognitive, achievement, and social-emotional measures assessing Adam's overall functioning. All of the relevant data support that Adam generally scores below average (SS = 85) on cognitive and academic measures and has elevated ratings on social-emotional areas such as depression, anxiety, attention problems, and learning problems.”

Case 3

“A teacher approaches you with concerns about a young student in their classroom. They report to you that this student, Adam, is inattentive in class and appears sleepy most days. He is generally kind to others, but he may exhibit frustration with completing tasks that require a lot of focus on some days. When having difficulty focusing, the teacher states that Adam usually stares at his paper outside through the window and at the front of the room. His teacher notes that they frequently have to call on Adam in class and redirect him to the lesson. Academically, Adam’s teacher states that he is a B- and sometimes C-student. Adam was reported to have a small group of friends with whom he is frequently seen hanging out in the hallways. Due to behavioral and academic concerns, a comprehensive psychoeducational evaluation was conducted on Adam. The following information is obtained due to a thorough records review and comprehensive evaluation of cognitive and achievement assessments.

Background Information:

Adam is an 8-year-old African-American male in the 2nd grade. He currently resides with his mom, dad, and younger brother at home. His mother states that Adam has met all of his developmental milestones, like walking and talking, within normal limits. He is noted to have seasonal allergies, epilepsy in the form of absence seizures, and occasional eczema.

Psychoeducational Information:

You administer various cognitive, achievement, and social-emotional measures assessing Adam's overall functioning. All of the relevant data support that Adam generally scores below average ($SS = 76$) on cognitive and academic measures and has elevated ratings on social-emotional areas such as depression, anxiety, attention problems, and learning problems.”

Case 4

“A teacher approaches you with concerns about a young student in their classroom. They report to you that this student, Adam, is inattentive in class and appears sleepy most days. He is generally kind to others, but he may exhibit frustration with completing tasks that require a lot of focus on some days. When having difficulty focusing, the teacher states that Adam usually stares at his paper outside through the window and at the front of the room. His teacher notes that they frequently have to call on Adam in class and redirect him to the lesson. Academically, Adam’s teacher states that he is a B- and sometimes C-student. Adam was reported to have a small group of friends with whom he is frequently seen hanging out in the hallways. Due to behavioral and academic concerns, a

comprehensive psychoeducational evaluation was conducted on Adam. The following information is obtained due to a thorough records review and comprehensive evaluation of cognitive and achievement assessments.

Background Information:

Adam is an 8-year-old African-American male in the 2nd grade. He currently resides with his mom, dad, and younger brother at home. His mother states that Adam has met all of his developmental milestones, like walking and talking, within normal limits. He is noted to have seasonal allergies, sickle cell disease, and occasional eczema.

Psychoeducational Information:

You administer various cognitive, achievement, and social-emotional measures assessing Adam's overall functioning. All of the relevant data support that Adam generally scores below average (SS = 76) on cognitive and academic measures and has elevated ratings on social-emotional areas such as depression, anxiety, attention problems, and learning problems.”

Question 1

Regardless of the method of assessment, please indicate the domains of functioning that you would include in an evaluation plan for Adam based on the information provided above.

Question 2

Which school-based service would you recommend, based on the presented case?

- (1) No special services
- (2) Section 504-plan

(3) Formal special education under IDEA

Question 3

Briefly describe your rationale for your decision.

Question 4

Which of the following would you recommend based on the presented case information?

1. Autism
2. Deaf-blindness
3. Deafness
4. Emotional disturbance
5. Hearing impairment
6. Intellectual disability
7. Multiple disabilities
8. Orthopedic impairment
9. Other health impairment
10. Specific learning disability
11. Speech or language impairment
12. Traumatic brain injury
13. Visual impairment (including blindness).

Question 5

What is your gender identity?

- a. Male
- b. Female

- c. Transgender
- d. Other

Question 6

What is your racial/ethnic identity?

- e. American Indian/Alaska Native
- f. Black/African American
- g. Hispanic/Latino
- h. Native Hawaiian/Other Pacific Islander
- i. White/Caucasian

Question 7

What is your geographic region?

- j. Northeast
- k. Southeast
- l. Northwest
- m. Southwest
- n. Midwest

Question 8

What is the highest degree you have obtained?

- o. EdS
- p. PsyD
- q. PhD

Question 9

How many years have you practiced in school psychology?

Question 10

Have you received training/supervision in the administration of tests that measure neuropsychological skills like memory and learning, attention/executive function, sensory and perception, etc.?

r. Yes

s. No

Question 11

From where did you receive training on conducting neuropsychological evaluations?

Appendix B



DUQUESNE UNIVERSITY

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CONSENT TO PARTICIPATE IN A RESEARCH STUDY

TITLE:

Understanding school psychologists' evaluation planning and special education eligibility decisions.

INVESTIGATOR:

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ADVISOR:

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Professor of School Psychology
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SOURCE OF SUPPORT:

This study is being performed as partial fulfillment of the requirements for the doctoral degree in School Psychology at Duquesne University.

STUDY OVERVIEW:

This study will explore how school psychologists approach evaluation planning and make special service recommendations for their cases. Participants will answer demographic questions, read a short case vignette, create an evaluation plan for the case, and then make special service recommendations (e.g., no formal services, Section 504 Plan, or formal special education eligibility) after being provided fictitious data. There are no notable risks or benefits to participate in this voluntary study. The anticipated number of participants required for this study is 200. The survey will take approximately 10 minutes to complete. Your voluntary participation is appreciated.

PURPOSE:

Psychoeducational evaluation and subsequent decision-making processes are primary activities of most school psychologists. Understanding factors related to school psychologist evaluation planning and decisions regarding specific cases can inform the professional development of future and existing school psychologists. Although you will only provide responses regarding one brief case in this study, the overall investigation will explore how school psychologists approach evaluation planning and make special service recommendations for different types of cases.

In order to qualify for participation, you must:

- Be 18 years of age or older
- Be a state-credentialed, practicing school psychologist
- Be willing to complete a brief electronic survey using your computer, tablet, or phone.

PARTICIPANT PROCEDURES:

If you consent to participate in this study, you will be asked to:

1. Read a paragraph describing a case that you likely could encounter in your practice.
2. Respond to three questions pertaining to your evaluation planning and your special service recommendations for the student.
3. Respond to nine demographic background questions (e.g., gender, race/ethnicity, geographic region, highest degree, and questions related to your school psychology training and years of practice).

Upon consenting to the study, you will automatically be taken to the survey. The survey will be administered electronically using Qualtrics XM platform and will take approximately 10 minutes of your time. You must complete the survey at one time.

RISKS AND BENEFITS:

There are minimal risks associated with participating in this study, but no greater than those encountered in everyday life. The benefits of participating in this study include contributing your knowledge on evaluation practices and decision making involved special service recommendations to the field of school psychology.

COMPENSATION:

There will be no compensation for participating in this study. The primary investigator of this dissertation study thanks you for contributing your time and responses.

CONFIDENTIALITY:

Your participation in this study, and any possibly identifiable personal information you provide, will be kept confidential to every extent possible. Your name will never appear on any survey or research instruments. All study materials and participant responses will be kept secure on a password protected survey system and computer. The raw data will be accessible only to the primary investigator of this study. Any publication of findings will involve aggregate data, and no one will be able to determine how you responded. All data will be destroyed 5 years after completion of this study.

RIGHT TO WITHDRAW:

You are under no obligation to start or complete this study. You can withdraw at any time without penalty or consequence by not completing or stopping the survey. Incomplete responses will not be used within analyses.

SUMMARY OF RESULTS:

A summary of the results of this study, not individual responses, will be provided to you at no cost. You may request this summary by contacting the researchers and requesting it.

FUTURE USE OF DATA:

There is no anticipated future use of these data. Data collected will not be provided to other researchers.

VOLUNTARY CONSENT:

I have read this informed consent form and understand what is being requested of me. I also understand that my participation is voluntary and that I am free to withdraw at any time, for any reason without any consequences. Based on this, I certify I am willing to participate in this research project.

I understand that if I have any questions about my participation in this study, I may contact Maria Tina Benno by phone at XXX-XXX-XXXX or by email at bennom@duq.edu. If I have any questions regarding my rights and protections as a subject in this study, I can contact Dr. David Delmonico, Chair of the Duquesne University Institutional Review Board for the Protection of Human Subjects at 412.396.1886 or at irb@duq.edu.

**This project has been approved/verified by
Duquesne University's Institutional Review Board.**

Proceeding to the next page indicates your voluntary consent to participate in this project.