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# School Psychologists' Communication and Collaboration with Community-Based Mental Health Professionals

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School Psychologists' Communication and Collaboration with Community-Based Mental  
Health Professionals

by

Audra St. John Walsh

A thesis submitted in partial fulfillment  
of the requirements for the degree of  
Education Specialist  
Department of Psychological and Social Foundations  
College of Education  
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## **Abstract**

Although collaboration between school psychologists and community-based mental health professionals is essential in the provision of comprehensive and effective mental health services for youth with intensive mental health needs, youth may not receive the full benefit of these coordinated efforts, as collaboration may not occur as often as it should. This study investigated the frequency of communication and collaboration between school- and community-based professionals, the purposes and methods of communication, and the benefits and barriers to collaboration. Survey data from 80 members of the Florida Association of School Psychologists were collected and analyzed. Forty-three percent of school psychologists reported communicating and collaborating with community-based mental health professionals between one and four times a year. Findings indicated that school psychologists prefer to communicate through phone calls, written reports, and face-to-face discussion; they also perceive these methods of communication to be most effective. Barriers to collaboration included limited accessibility of community professionals and lack of time to collaborate. A significant relationship was found in communication frequency and number of professional development hours received related to mental health. Implications of these findings are discussed in relation to developing strategies for practitioners and trainers of school psychologists aimed at optimizing the mental health of youth.

## **Chapter One**

### **Introduction**

#### **Statement of the Problem**

The significant increase in the number of school aged children diagnosed and treated for psychiatric illness in the United States over the last several decades has been well documented in both the professional literature and mass media sources. It has been estimated that between 10% and 20% of school-age children, and perhaps more, suffer from psychiatric illness, which encompasses a number of conditions, including Attention-Deficit/Hyperactivity Disorder, anxiety, autism, depression, bipolar disorders, and schizophrenia (Doll, 1996; Doll & Cummings, 2008). Without intervention, these conditions often result in academic and social problems in school, which may continue into adulthood (Shaw & Woo, 2009). Evidence from emerging research supports the positive relationship between early intervention for mental illness and improved educational outcomes.

Despite the prevalence of children with mental illness, there is much that is unknown about the diagnosis and treatment of mental illness in the developing child. The multifarious nature of child development, the heterogeneity of the expression of mental disorders, the overlapping symptoms, the premorbidity and comorbidity among disorders, the child-by-child variability in response to treatment, and the varying

environmental experiences of children are just a few factors that complicate the identification and treatment of childhood mental illness.

Collaboration between school psychologists and community-based mental health professionals (CBMHPs) has the potential to result in a myriad of benefits for children with mental illness. CBMHPs include professionals such as psychiatrists, psychologists, neurologists, licensed mental health counselors, therapists, social workers, mental health case managers, and pediatricians who work for either a public or private organization to ameliorate mental illness and/or promote health in general. Collaboration between school psychologists and CBMHPs has the potential to increase the early identification of mental illness and improve the effectiveness of treatment for individuals struggling to cope with these illnesses (Nastasi, 2004). Through collaboration, school psychologists and CBMHPs can share data collected across diverse settings (i.e., both naturalistic and clinical) and clearly define and analyze the presenting problem(s). This partnership has the potential to increase the efficacy and accuracy of the diagnosis, assist with the identification of evidence-based treatments, and allow for close monitoring of a child's progress toward a goal.

Although collaboration between school psychologists and CBMHPs has potential to improve student outcomes, it has been suggested that collaborative practices are not employed as frequently as they could be (Shaw & Woo, 2008). Additionally, there is scant evidence in the professional literature (e.g., professional journals) of research investigating the collaborative practices of school psychologists and CBMHPs on behalf of children with mental illness. Thus, the frequency that collaboration occurs between

school psychologists and CBMHPs in regard to supporting students with mental illness remains unclear.

### **Importance of Collaboration**

Accurate diagnosis and identification of effective treatments for children with mental illness is extremely challenging. The complicated nature of the manifestation of childhood mental illness, the variable child-specific responses to treatment, the difficulty implementing treatments with integrity, and challenges in monitoring treatment effects are all contributing factors to this challenge.

Collaboration between school psychologists and CBMHPs has the potential to resolve many of these challenges and generate unique and powerful benefits for children with mental illness. Specifically, the benefits of collaboration include, but are not limited to, the collection and sharing of data across multiple settings, implementing interventions linked to assessment, increased treatment integrity, and capacity to monitor treatment effects. The integration of data collected across multiple settings (i.e., school, home, clinic, etc.) enables a comprehensive knowledge of a child's strengths, weaknesses, and dysfunctions, resulting in accurate identification of the problem and diagnosis which can be linked to effective treatment (Batsche, Castillo, Dixon, & Forde, 2008).

Collaboration can also increase treatment integrity by informing school psychologists of community-based treatment details and informing CBMHPs of school-based interventions. This sharing of treatment specifics allows both the school psychologist and the CBMHP to provide ongoing psychoeducational support on the importance of carrying out an intervention as intended. Through collaboration, the ability to monitor the effects of treatment will be enhanced by coordinating efforts to progress

monitor treatment effects, both intended and unintended (Carlson, 2008). Because school psychologists are knowledgeable of both educational and mental health factors they are in a prime position to develop progress monitoring plans that are acceptable to teachers and students as well as to collect, share, and interpret progress monitoring data with CBMHPs.

### **Theoretical Framework**

Bronfenbrenner's ecological systems theory to human development formed the theoretical basis of the present study (1977, 1979, 1989). According to Bronfenbrenner, child development is shaped by factors within and across multiple systems such as the microsystem (i.e., the child and immediate home and school environments), the mesosystem (i.e., interactions between components of the microsystem), the exosystem (e.g., social contexts of norms, beliefs, and expectations), and the macrosystem (i.e., cultural values, general beliefs, customs, and laws of a society). For instance, a child's developmental trajectory is shaped by within-child factors (e.g., genetics, temperament, etc.) and the child's relationship with significant others (e.g., parents, grandparents, teachers, neighbors, etc.), the settings in which the child spends their time (e.g., home, school, daycare, camp, etc.), the interactions between significant people across environments (e.g., school and home), the institutions which impact the child (e.g., government), and the overarching culture in which these systems function.

More specifically, optimizing outcomes for children with mental illness is grounded in ecological systems theory because various systems (i.e., micro-, meso-, exo-, and macro) influence the social-emotional trajectory of children with mental illness (Adelman & Taylor, 1999). Within the micro-system, each child has unique

characteristics related to genetics and temperament, which may result in vulnerability or protection from developing mental illness. Also, at home, parents model behavior and respond to their child's behavior thereby shaping a child's social-emotional development. School personnel, such as teachers and school psychologists, create learning environments and behavior management systems, which contribute to the social-emotional development of children as well. Within the meso-system, school psychologists, teachers, parents, and CBMHPs may collaborate to implement coordinated interventions across home and school environments. The micro- and meso- systems function within the exo- and macro- systems, which shape development through the beliefs, norms, and expectations of the community and larger society as a whole. The ecological systems theory underscores the individual, family, and social factors involved in human development and emphasizes the need for collaboration between and across systems (i.e., between parents, teachers, school psychologists, CBMHPs, etc.) in order to promote mental health in childhood.

### **Purpose of the Current Study**

The primary purpose of this study was to investigate the current practices and experiences of practicing school psychologists in Florida relative to their communication and collaboration with CBMHPs on behalf of students with mental illness. This study intended to obtain data regarding the frequency of collaboration between school psychologists and CBMHPs. Additionally, this study aimed to collect data regarding school psychologists' purposes and methods of communication with CBMHPs. Another goal of this study was to acquire data about school psychologists' perceptions of the benefits and barriers to collaboration with CBMHPs. Another objective was to

determine whether school psychologists' collaborative practices differ as a function of specific variables (e.g., training and experience of the school psychologist, socio-economic status of the students served by the school psychologist, number of students served by the school psychologist, etc.). The final goal of this study was to determine whether school psychologists' collaborative practices are predicted by the percentage of students they serve with various mental disorders. By gaining a better understanding of school psychologists' collaborative practices and perceptions, strategies have been developed to increase communication and collaboration. School psychologists and trainers of school psychology can implement these strategies in order to promote the mental health of children.

### **Research Questions**

To gather information regarding school psychologists' collaborative practices on behalf of children with mental illness, the following research questions were addressed in items on a mail-out survey that practicing school psychologists in the State of Florida were asked to complete.

**Research question 1.** What is the frequency of communication and/or collaboration between school psychologists and community-based mental health professionals on behalf of students with mental health problems?

**Research question 2.** With which type of community-based mental health professionals are school psychologists communicating and/or collaborating?

**Research question 3.** What is the nature and purpose of communication/collaboration between school psychologists and community-based mental health professionals?



**Research question 4.** What methods do school psychologists most frequently utilize to communicate with community-based mental health professionals?

- a. What are the preferred methods of communication?
- b. What are the most effective methods of communication?

**Research question 5.** What do school psychologists perceive as the benefits and barriers of collaboration with community-based mental health professionals?

**Research question 6.** Does the frequency of communication/collaboration between school psychologists and community-based mental health professionals relate to:

- a. the graduate training of the school psychologist (i.e., highest degree earned)?
- b. the ongoing training of the school psychologist (i.e., ongoing professional development)?
- c. the years of experience of the school psychologist?
- d. the socio-economic status of the student population served by the school psychologist (i.e., Title 1 funding)?
- e. the number of students served by the school psychologist?
- f. the type of community where the majority of the students served by the school psychologist reside (e.g., urban vs. rural)?

**Research question 7.** Is the frequency of collaboration between school psychologists and community-based mental health professionals predicted by the percentage of students the school psychologist serves with various mental disorders?

### **Contributions to the Literature**

The current study contributes to the existing literature by presenting data on current collaborative practices of school psychologists with CBMHPs on behalf of

children with mental illness. In addition, this study contributes to the literature by developing strategies to enhance collaborative practices based upon data on the perceived benefits and barriers to this type of collaboration. Additionally, the findings from this study contribute to the literature by providing recommendations for trainers of school psychologists regarding interdisciplinary collaboration.

### **Definition of Key Terms**

**Mental health.** “Mental health is a state of successful performance of mental function, resulting in productive activities, fulfilling relationships with other people, and the ability to adapt to change and to cope with adversity. Mental health is indispensable to personal well-being, family and interpersonal relationships, and contribution to community or society.” (U. S. Department of Health and Human Services [USDHHS], 1999, p.4).

**Psychopathology and mental illness.** The terms psychopathology and mental illness are terms that “refer to all diagnosable mental disorders. Mental disorders are health conditions that are characterized by alterations in thinking, mood, or behavior (or some combination thereof) associated with distress and/or impaired functioning...Alterations in thinking, mood, or behavior contribute to a host of problems—patient distress, impaired functioning, or heightened risk of death, pain, disability, or loss of freedom (DSM-IV, 1994 [American Psychiatric Association, 1994])” (U. S. Department of Health and Human Services [USDHHS], 1999, p. 5). Childhood psychopathology and mental illness refer to those conditions that present in infancy, childhood, and/or adolescence.

**Community-based mental health professionals.** Mental health professionals including psychiatrists, psychologists, neurologists, social workers, mental health case managers, licensed mental health counselors, and pediatricians who work for either a public or private organization are referred to as community-based mental health professionals (CBMHPs; Johnson, Tobben, & Hong, 2005). For the clarity of this study, CBMHPs are those individuals who work outside of a child's school.

**Communication.** For the purposes of the study the term communication refers to a one-time, unidirectional sharing of information regarding a student (e.g., a phone call, letter, or email; Bradley-Klug, Sundman, Nadeau, Cunningham & Ogg, 2010).

**Collaboration.** The term collaboration refers to ongoing, bi-directional sharing of information by two or more people who are working together to plan and problem-solve to promote positive outcomes for a child (Bradley-Klug et al., 2010). An example of collaboration may include when a school psychologist provides ongoing consultation regarding information that helps CBMHPs understand the school system and the services that are available. CBMHPs then provide information about the specific needs of the student, including such information as the educational implications and accommodations for the student's mental health. Based on the expertise and coordinated efforts of the school psychologist and CBMHP, a comprehensive intervention plan is developed.

## **Chapter Two**

### **Review of the Literature**

This chapter reviews the professional literature in order to provide a context for the purpose and rationale of the current study. Specifically, this chapter reviews the literature in three main areas: 1) the prevalence and prognosis of childhood psychopathology, 2) best practices and current issues in the diagnosis and treatment of childhood psychopathology, and 3) the need for collaboration between school psychologists and community-based mental health professionals [CBMHPs] on behalf of children with mental illness. The current study is informed and guided by this review of the literature.

#### **Prevalence and Prognosis of Childhood Psychopathology**

According to Doll and Cummings (2008), between 10% and 20% of school-age children, and perhaps more, experience behavioral, social, and/or emotional problems resulting in a diagnosable psychiatric disorder. Most commonly, these disorders include Attention-Deficit/Hyperactivity Disorder (ADHD), anxiety disorders, and depression (Albano, Chorpita, & Barlow, 2003); however, they also include Pervasive Developmental Disorders, Bipolar Disorder, and Schizophrenia (Merrell, 2009). These complex psychiatric disorders vary widely in regard to onset, manifestation of symptoms, and the degree of impact on academic, social, and emotional wellbeing.

In recent years, research has emerged indicating that mental health is vital for school success. In a longitudinal study conducted by Masten and colleagues (2005) the link between mental illness and academic achievement was examined. Specifically, symptoms of mental illness and academic performance of a normative sample of 205 children were assessed at 8 to 12 years old and then again 7, 10, and 20 years later. Structural equation modeling was used to test a series of nested developmental cascade models (i.e., the relational models linking mental illness to academic problems). Findings from this study suggest that externalizing problems in childhood have a negative impact on academic achievement and contribute at least in part to internalizing problems in adulthood. Although findings from this normative sample indicate that internalizing problems in childhood have relatively little negative impact on academic achievement, it is probable that academic problems develop for subgroups experiencing clinical levels of internalizing symptoms.

Another study by Graziano and colleagues (2007) investigated the relationship between emotion regulation, a common difficulty for children with mental illness, and academic success in kindergarten (n=325). Findings suggest that there is a positive relationship between emotion regulation and standardized early literacy and math test scores as well as teacher reports of academic success. These findings have profound implications for parents, educators, and mental health professionals to prevent and intervene in the development of childhood mental illness.

In general, the majority of schools that provide a continuum of mental health services will likely meet the social-emotional needs of the majority of students (Doll & Cummings, 2008). However, there will likely be a small number of students within each

school who require support beyond the scope of resources available. These students with the most significant dysfunction will thus benefit from the additional support of CBMHPs (Doll & Cummings, 2008).

The following sections will briefly review 6 common mental disorders in children and their implications for a child's functioning within a school setting and beyond. The disorders included for review were chosen based on either their high prevalence (e.g., ADHD, anxiety, and depression) or level of impairment presented in childhood (e.g., Pervasive Developmental Disorder, bipolar disorder, and schizophrenia) and are reviewed in order of prevalence in childhood (i.e., from more to less common). Although there are multiple diagnostic systems, such as the *International Classification of Diseases* (IDC-10; World Health Organization, 2005), the *Diagnostic and Statistical Manual of Mental Disorders* (4<sup>th</sup> ed., text rev.) (DSM-IV-TR; American Psychiatric Association, 2000), and the guidelines set forth in IDEA, for the sake of clarity and consistency this chapter discusses childhood mental disorders based on the criteria set forth in the DSM-IV-TR, as this is the principle classification system for mental illness (Beauchaine & Hinshaw, 2008).

**Attention-Deficit/Hyperactivity Disorder.** Initiating and sustaining attention in school is one of the most common behavioral problems for school-aged children (Wolraich, Hannah, Baumgaertel, & Feurer, 1998). Three to five percent of children in elementary school experience attentional problems beyond those of a typically developing child and are diagnosed with ADHD (Barkley, 2006). The American Psychiatric Association (1994) describes the prominent characteristic of Attention-Deficit/Hyperactivity Disorder [ADHD] as a “persistent pattern of inattention and/or

hyperactivity-impulsivity that is more frequent and severe than is typically observed in individuals at a comparable level of development” (p. 78). The four subtypes of ADHD that children present are 1) inattentive, 2) hyperactive-impulsive, 3) combined and 4) not otherwise specified. Generally, the onset of ADHD begins in infancy or early childhood, continues throughout childhood, and requires adjustment during adulthood (Merrell, 2009).

Children diagnosed with ADHD typically experience a number of behavioral and academic challenges throughout their school experience. Behaviorally, these children experience difficulty engaging and maintaining appropriate peer relationships and following classroom and school rules. In fact, without proper intervention, these children are at higher risk for poor peer relationships as well as antisocial acts such as lying, stealing, and fighting (DuPaul, Stoner, & O’Reilly, 2008). Academically, children with ADHD often experience difficulty associated with inattention, poor academic engagement, and inconsistent task completion (DuPaul & Stoner, 2003). Without proper intervention, these children are more likely to earn lower grades and experience grade retention, and less likely to earn a college degree than their typically developing peers (Weiss & Hechtman, 1993).

**Anxiety.** A study by Costello (1989) estimated that almost 9% of children are diagnosed with an anxiety disorder. Research shows that anxiety and depression tend to exist concurrently, and some recent estimates indicate that “as many as 15-20% of children and youth have depressive or anxiety symptoms that warrant direct intervention, and many more are at risk for developing symptoms during the childhood or adolescent years” (Huberty, 2008, p. 1473). A recent study conducted by Kessler and colleagues

(2010) found that the median age of the onset of anxiety disorders is 11 years. In new or dangerous situations, anxiety is normal and considered adaptive because it alerts a child to potential harm (Ramirez et al., 2006). However, elevated levels of anxiety, including excessive worries, fears, and/or phobias, lead to common psychological problems for school-age children (Huberty, 2008). Unhealthy levels of anxiety are frequently masked in children because it is common for young children to experience transient fears and anxiety, which are considered part of normal development. Although there is still much unknown about the onset and development of anxiety disorders in childhood, it is clear that when anxieties and fears become excessive and severe, an anxiety disorder may be present (Albano, Chorpita, & Barlow, 2003). As listed in the *DSM-IV*, there are nine anxiety disorders, that children can be diagnosed with including, seasonal affective disorder, panic disorder, agoraphobia, generalized anxiety disorder, social phobia, specific phobia, obsessive compulsive disorder, posttraumatic stress disorder, and acute stress disorder (*DSM-IV*; American Psychiatric Association, 1994). The features of these disorders involve “subjective feelings (e.g., discomfort, fear, dread), overt behaviors (e.g., avoidance, withdrawal), and physiological responding (e.g., sweating, nausea, general arousal)” (Merrell, 2009, p. 309).

Children who experience anxiety disorders often face academic, behavioral, and social-emotional difficulties throughout their school years and into adulthood. Anxiety has been found to greatly impede a child’s ability to focus on a task and hold information in their working memory (Levine, 1999), which, in turn, can have negative effects on academic performance. For instance, if a child is preoccupied with excessive worry then they may have difficulty attending to and completing academic tasks. Socially, these



children tend to withdraw from situations rather than risking rejection, which often results in difficulty making friends (Huberty, 2008). While the extant literature is limited due to a number of methodological constraints, research is emerging that suggests that some childhood anxiety disorders may begin in a child's preschool school years (Spence, Rapee, McDonald, & Ingram, 2001) and without proper intervention/treatment, may continue throughout adulthood (Albano, Chorpita, & Barlow, 2003).

**Depression.** While the rate of depression in children is relatively low (Cohen et al., 1993), ranging from approximately 1%-6% or higher (Costello, 1989), depression is one of the most prevalent lifetime disorders (Kessler et al., 2010) and often begins in youth (Huberty, 2008; Stark, Molnar, Simpson, 2006). Depression is more than temporarily feeling "blue" or "down in the dumps". Rather depressive characteristics span the cognitive domains (e.g., feelings of hopelessness, difficulty making decisions, and low self-esteem), behavioral domains (e.g., depressed mood, social withdrawal, irritability, apathy, and suicide attempts), and physiological domains (e.g., insomnia or hypersomnia, somatic complaints, and fatigue) (Huberty, 2008). According to the *DSM-IV*, the fundamental symptoms of childhood depression are dysphoric mood and/or loss of interest or pleasure in almost all usual activities and pastimes. In addition to these symptoms, the *DSM-IV* includes seven additional symptoms of which four need to be present in order for a diagnosis of depression to be made (i.e., poor appetite or significant weight loss, trouble with sleep, psychomotor agitation or retardation, loss of energy or fatigue, feelings of worthlessness or guilt, difficulty with concentration or decisiveness, and recurrent thoughts of death or suicide) (American Psychiatric Association, 1994).

Depression during childhood is often tied to poor academic performance. In fact, Stevenson and Romney (1984) found that between 10% to 20% of children with learning disabilities also experienced depression. Academically, children with depression tend to have lower grades (Forehand, Brody, Long, & Fauber 1988), lower motivation, and under achieve. The research is inconclusive, however, about the direction of this relationship. In other words, it is difficult to determine whether a child is depressed because they have academic deficits and experience frequent failure, or whether they experience academic failure because of the disengagement associated with depression (Levine, 1999). Similarly to the social-emotional challenges of children with anxiety, children with depression tend to isolate themselves from their peers. They may also experience lower thresholds for frustration and thus show signs of irritability, which may create further isolation. Without appropriate intervention and treatment, depression that begins in childhood will likely result in academic and social-emotional problems that persist across the individual's life span, and in some cases may become a debilitating problem.

**Pervasive Developmental Disorders.** Pervasive Developmental Disorders [PDD], including Autism Spectrum Disorder (ASD), Rett's Disorder, Childhood Disintegrative Disorder, and Asperger's Syndrome, are neurodevelopmental disorders "characterized by severe and pervasive impairment in several areas of development: reciprocal social interaction skills, communication skills, or the presence of stereotyped behavior, interests and activities" (American Psychiatric Association, 1994, p. 65). Compared to other childhood mental illnesses PDD are rare. In fact, according a recent study conducted by Kogan and colleagues (2009), ASD, which is one of the more

common PDD, affects one in 91 children in the United States. However, these disorders are among some of the most debilitating in childhood (Merrell, 2009).

As a result of the core symptoms, children who are diagnosed with a PDD tend to have impaired social functioning. While specific social deficits vary widely among children with PDDs, general areas of difficulty are observed. Children with PDD typically have difficulty initiating and sustaining eye contact, experiencing physical contact, and modulating vocalizations, if they are able to speak at all. Children with PDD often display repetitive and perseverative behaviors, which, depending on the degree of these behaviors, may cause them to have difficulty communicating their basic human needs, forming and maintaining friendships, interacting appropriately with adults, and engaging in social relationships throughout their lifetime. Despite these constant social deficits, the academic functioning of children with PDD is extremely variable. Some PDD are associated with intellectual disabilities (e.g., Childhood Disintegrative Disorder) while others tend to be accompanied by higher levels of intellectual functioning (e.g., Asperger's Syndrome). Due to this variance, the academic prognosis for children with PDD depends to a large extent on the individual level of cognitive functioning as well as the extent to which the child received early and ongoing intervention/treatment (Dawson & Osterling, 1997; National Research Council [NRC], 2001; Odom, Brown, Frey, Karasu, Smith-Canter, & Strain, 2003).

**Bipolar Disorder.** Rates of early onset bipolar disorder in children are low (American Psychiatric Association, 1994), with current estimates of prevalence to be around 1% (Lewinsohn, Klein, & Seeley, 1995). However, a study conducted by Lish and colleagues (1994) found that 60% of adults with bipolar disorder reported

experiencing symptoms in childhood or adolescents. The features of bipolar disorder include cycling between episodes of major depression and mania in the case of Bipolar 1, or depression and hypomania in the case of Bipolar 2 (Hammen & Rudolph, 2003). The depressive episodes of bipolar disorder are much like depressive episodes previously described in that, among other things, they are marked by dysphoric mood and/or loss of interest or pleasure in almost all usual activities and pastimes. They are different from depressive episodes in that they are followed by a period of regulated mood, which is then followed by a manic or hypomanic episode. In children, manic episodes include a period of abnormally elevated or irritable mood, which often involve behaviors such as rages and explosive temper tantrums, elation as represented by periods of extreme giddy or silly behavior, restlessness and difficulty falling and staying asleep, rapid or pressured speech, racing thoughts, distractibility, grandiosity, hyper-sexuality, and increased risk-taking behavior (Papalos & Papalos, 2006). Symptoms of hypomania are similar to those of mania, however, they are less severe. The duration and severity of manic and depressive episodes as well as the interval of time between episodes may be quite variable from person to person. Although rapid cycling, or quickly moving between depressive and manic phases, is rare in adults, it is very common in children with early-onset bipolar disorder.

While prevalence of bipolar disorder is low in children, occurrences are often severe, putting children with early onset bipolar disorder at high risk for school failure, social rejection, and even suicide. Children with early-onset bipolar disorder often struggle academically which may be due to decreased academic engagement related to symptoms of depressive or manic episodes (i.e., inattention due to racing thoughts or lack

of motivation due to depression). In addition to decreased academic engagement, the academic difficulties of children with bipolar disorder may be comorbid with learning difficulties such as deficits in executive functioning and working memory (Mayes & Calhoun, 2006). While academic challenges of children with bipolar disorder exist, often they are overshadowed by the severe social-emotional problems that emerge in school. During periods of depression, these children tend to isolate themselves from their peers and adults, which can negatively impact the development of social skills and support systems. During periods of mania, these children tend to have difficulty considering another child's point of view, taking turns, sharing, compromising, and appropriately expressing their concerns or needs. This often contributes to becoming easily frustrated in peer interactions and may lead to further social isolation. In addition to academic and social challenges, during healthy periods between episodes, children with bipolar disorder often experience elevated levels of anxiety, confusion, stress, and guilt about the impact their behavior has on their family and friends. Without early and effective intervention, these academic and social struggles often endure throughout an individual's lifetime and may lead to high levels of risk taking behaviors such as substance abuse, unprotected sexual activity, and even suicide

**Schizophrenia.** Like bipolar disorder, the rates of schizophrenia in children, also referred to as early onset schizophrenia (EOS), are low (American Psychiatric Association, 1994), with only 10% of all cases of schizophrenia manifesting before the age of 18 (Muratori, Salvadori, Arcangelo, Viglione & Picchi, 2005). The hallmark symptoms of schizophrenia “include 1) delusions of thought, 2) prominent and lasting

hallucinations, 3) incoherence or a marked loosening of association, 4) catatonic behavior, and 5) flat or grossly inappropriate affect” (Merrell, 2009, p. 363).

Individuals who experience the disturbances in thought, perception, and affect associated with EOS typically experience severe decline in academic and social functioning. Due to the break from reality that is typically associated with EOS, these children may lack academic engagement and the ability to attend to tasks. Additionally, social relationships with peers and adults are impaired by markedly peculiar behaviors such as talking to themselves, hoarding odd items, and showing disregard for personal hygiene. Although EOS typically begins in adolescence, recent research suggests that behavior problems emerge much earlier in development. Specifically, adolescents diagnosed with EOS frequently report symptoms of social withdrawal and isolation earlier in childhood (Muratori et al., 2005). Typically, children and adolescents diagnosed with EOS experience significant impairment throughout their life span and some evidence indicates EOS may represent a particularly severe variant of the disorder (Asarnow & Asarnow, 2003).

### **Risk and Protective Factors of Mental Illness**

Because the major emphasis of this chapter is on the prevalence, prognosis, diagnosis and treatment of childhood mental illness, the risk factors associated with mental illness discussed in this section are not examined in substantial depth. Rather this section is intended to provide a brief overview of what is currently known about the risks and protective factors related to childhood mental illness to provide a context for diagnostic and treatment practices.

While the exact causes of mental illnesses remain unknown, in recent years there has been an increased level of research aimed at determining the factors that contribute to the onset and persistence of mental disorders. Cross-disciplinary researchers agree, however, that mental illness is a developmental brain disorder whereby genetic vulnerability and environmental risk factors interact resulting in atypical thought and behavior (Isel, 2010).

While many details on the causes of mental illness have yet to be explicitly discerned, in recent years evidence has emerged suggesting that mental illness has a genetic basis. Specifically, results from a number of twin and molecular genetic studies indicate that certain combinations of genes are responsible for each individual's degree of vulnerability for mental illness (Eley & Stevenson, 1999; Kendler, Neale, Kessler, Heath, & Eaves, 1992; Reinemann, Stark, Molnar & Simpson, 2006; U.S. Department of Health and Human Services, 1999).

This genetic risk factor interacts with “unique environmental experience (and) modifies the specific expression of this vulnerability” (Albano, Chorpita, & Barlow, 2003, p. 309). In other words, for individuals who are genetically predisposed, the manifestation of a mental disorder is dependent on environmental stressors and protective factors. While environmental stressors such as prenatal assault, abuse, or poverty may elicit the expression of mental illness, environmental protective factors such as healthy role models, secure home environments, and coping strategies may prevent the onset of mental illness (U.S. Department of Health and Human Services, 1999). The critical role environmental factors play in the onset and persistence of mental illness makes a

compelling argument for early identification and intervention as a means of preventing the onset and/or minimizing the severity of mental illness.

### **Diagnosis and Treatment of Childhood Psychopathology**

**Diagnosis.** The diagnosis of mental illness is a multifaceted process that cannot be simplified into an exact step-by-step sequence. Because mental illness cannot be identified by one simple test, it must be diagnosed through a process of generating and testing hypotheses. This diagnostic process is often termed differential diagnosis. When making a differential diagnosis, practitioners must first gather data about a child's presenting symptoms, behaviors, and developmental history. They must then decide whether it is considered normal or abnormal in nature compared to others in their peer group. Finally, they must decide how to classify the problem (Merrell, 2009), which is done by forming hypotheses, or potential diagnoses, then testing these hypotheses by collecting new data obtained through observations, parent/teacher ratings of a child's behavior, and clinical interviews (Pennington, 2009).

***Advantages of diagnosis.*** Despite the complexities involved, there are a number of benefits of diagnosing mental illness in children discussed in the literature. The diagnosis of mental illness in children can lead to early identification, intervention, and access to needed services. Research literature spanning a wide variety of mental disorders indicates that early intervention has the potential to minimize environmental stressors and increase protective factors for children diagnosed with mental illness, thus decreasing the severity and/or duration of mental illness over the course of a lifetime (Beauchaine & Neuhaus, 2008; Cole & Hall, 2008; Dawson & Osterling, 1997; National Research Council [NRC], 2001; NIMH, 2001; Schwartz & Davis, 2008). Conversely,



without intervention, mental illness often results in academic and social problems in school, which may continue into adulthood (Dadds et al, 1999; Dawson & Osterling; 1997; National Research Council [NRC], 2001; NIMH, 2001; Schwartz & Davis, 2008; Shaw & Who, 2008). Evidence from emerging research supports the positive relationship between early intervention for mental illness and improved educational outcomes (Dawson et al., 2010). Another benefit to diagnosing mental illness in children is that it provides guidance to professionals working with the child, allowing them to call upon their past experiences and knowledge of best practices for working with children with a specific disorder. By diagnosing a child with a mental disorder, parents and professionals working with the child may have an increased understanding of the child's condition, which may result in more precisely identifying and meeting their specific needs. Additionally, diagnoses are often required by educational and mental health service institutions in order to reimburse clients and/or compensate providers for services (Merrell, 2009).

***Diagnostic challenges.*** The process of differential diagnosis of mental illness in children is complicated by a number of factors including the multifarious nature of child development, the heterogeneity of the expression of mental illness, the premorbidity and comorbidity among disorders, the varying environmental experiences of children, and the various systems of classification. These complex factors can make diagnosis of childhood mental illness extremely difficult.

The challenges of diagnosis are compounded by the complexity of child development, which involves the maturation and integration of diverse physical and cognitive functions. The development of interconnected motor, cognitive, language,

adaptive, and social functions of the child is “neither uniform nor linear, but is punctuated by hesitations, false starts, trial and error, regressions, and progressions” (Levine, 1998, p. 2) which can influence the manifestation of mental disorders (Tobert, 1996). Moreover, each child’s precise sequence of development may vary dramatically depending on biological and environmental factors. Social-emotional development during childhood is particularly variable, which is even more pronounced in the behavior of young children as it tends to be dramatically influenced by environmental factors (Cicchetti & Curtis, 2006; Rutter, Pickles, Murray, & Eaves, 2001). This variation makes it difficult to diagnose childhood mental illness because clinicians have difficulty determining whether social-emotional and behavior problems are the result of a developmental delay, which is likely to decrease with maturation, or whether the behavior problem is the result of an emerging mental disorder.

Not only are the types of childhood mental illnesses diverse in nature, but similarly to adult populations, great heterogeneity exists even among children with the same diagnosis. Although each disorder has hallmark symptoms, children tend to present a unique combination of symptoms along with the common characteristics. Thus, it is likely that two children diagnosed with the same disorder present behaviors and experience social-emotional challenges that differ greatly. For example, two children may have a clinical *DSM-IV* diagnosis of bipolar disorder, however during manic episodes their symptoms may be expressed in very different ways. One child may present with obvious symptoms of irritability, pressured speech, hypersexuality, racing thoughts, and risk taking behaviors while the other child may present with euphoria, elation, and extremely giddy behaviors. These differences in the expression of disorders

are seen across all mental illnesses and make differential diagnosis more difficult because there is not a clear-cut formulaic method of diagnosis. Rather, diagnosis typically involves using the data available (e.g., gathered through observation, rating scales, and in a clinical interviews) to find a diagnosis of best fit (Pennington, 2009).

Accurate diagnosis is also complicated by the nature of the symptoms a child presents. While not all, most *DSM-IV* disorders can be organized into one of two overarching dimensions: internalizing or externalizing problems. Externalizing disorders, or disorders involving undercontrolled behaviors (Cicchetti & Toth, 1991) such as aggressive, disruptive, hyperactive behaviors (Merrel, 2009), typically include the Hyperactive/Impulsive and Combined subtypes of ADHD (Tobin, Schneider, Reck, Landau, 2008) as well as Conduct Disorders. Internalizing disorders, or disorders involving overcontrolled behaviors (Cicchetti & Toth, 1991) such as dysphonic mood, withdrawal, anxiousness and inhibition (Merrel, 2009), typically include the inattentive subtype of ADHD (Tobin, Schneider, Reck, Landau, 2008), Anxiety, and Depression. Bipolar disorder, PDDs, the Combined subtype of ADHD, and schizophrenia do not fit as precisely into the externalizing or internalizing taxonomy (Merrel, 2009) and may instead contain behaviors that fall into both dimensions simultaneously.

Challenges arise in diagnosing externalizing and internalizing behaviors. Because the symptoms of externalizing behaviors are often aggressive and/or disruptive in nature, these disorders are difficult to overlook but have the tendency to be over-diagnosed especially among children in certain demographic groups (Harris-Murri, King, & Rostenberg, 2006). On the other hand, due to the nature of the symptoms of

internalizing disorders, such as withdrawal and inhibition, children with these disorders are often overlooked and under-diagnosed (Reynolds, 1992).

Another significant challenge practitioners face in diagnosing childhood mental illness is the difficulty identifying the disorder when a child presents with a complex set of frequently overlapping symptoms, especially when they are complicated by premorbid and/or comorbid disorders. Premorbidity is a term that is used to refer to disorders that precede the onset of another disorder and a comorbid condition is when a child has more than one disorder (Reinemann et al., 2006; Sistrunk, 2007). For example, there is a growing body of research indicating that childhood depression and anxiety often co-occur (Last, Strauss, and Francis, 1987; Laurent & Ettelson, 2001). However, other research suggests that periods of unmanaged anxiety can lead to subsequent onset of depression (Avenevoli, Stolar, Li, Dierker, & Ma, 2001; Kovacs, Gatsonis, Paulauskas, & Richards, 1989; Lewinsohn, Zinbarg, Seeley, Leinsohn & Sack, 1997; Pine, Cohen, Gurley, Grook & Ma, 1998; Wickramaratne & Weissman, 1998). Simply put, many disorders have overlapping symptoms. For example, children with ADHD, anxiety, and bipolar disorder commonly present symptoms of inattention and/or hyperactivity; however, the core reasons for these symptoms are quite different. In addition, children with early onset bipolar disorder often present severe ADHD-like symptoms from a very young age and many are diagnosed with ADHD prior to receiving a diagnosis of bipolar disorder. There remain differing viewpoints about the relationship between these two disorders and research is inconclusive about whether childhood bipolar disorder may follow premorbid ADHD, bipolar disorder and ADHD are comorbid, or whether the attentional, aggressive, and impulsive problems of early onset bipolar disorder are unrelated to ADHD (Carlson,

2009). It is noteworthy that some research indicates that stimulant medication used for the treatment of ADHD may induce early onset bipolar disorder (Carlson, 2009). When children present with complex and overlapping symptom profiles such as these, it may be difficult for the practitioner to differentiate between disorders and thus misdiagnoses may occur (Costello et al., 2002).

A point of noteworthy caution, as discussed by Levine (1999) is that diagnostic labels have the potential to oversimplify developmental dysfunction. He asserts that labeling a disorder may create a false dichotomy, which has the potential to misrepresent a child's condition. Additionally, labels, particularly those for mental illness, are associated with strong and enduring stigmas, which can result in discrimination. Historically, people with mental illness have been discriminated against in educational settings as well as in the workplace. Therefore, children with mental illness, and their families often live with fear that diagnosis or treatment of their condition will result in life-long discrimination and judgment. Another potential risk associated the diagnosis of childhood mental illness is the potential for the self-fulfilling prophecy to occur (Snyder, Tanke, & Berscheid, 1977). In other words, children who are diagnosed with a mental illness may, consciously or not, underachieve and/or present inappropriate behaviors as a result of the societal expectations associated with people who have mental illness. Due to stigmas and self-fulfilling prophecy, practitioners will often air on the side of caution and avoid diagnosis until developmental delays can be ruled out.

**Treatment.** The treatments for childhood mental illness are extremely varied and finding an effective treatment is a dynamic process. There is not one prescriptive treatment that works for all children or disorders; rather, effective treatment of social-

emotional and behavioral problems typically results from a child specific, individualized treatment plan that combines various evidence-based interventions and is directly linked to a validated diagnosis. There are three overarching approaches for treating childhood mental illness that are supported by research: 1) psychotropic medication, 2) psychosocial therapy, and 3) a combination of treatments. The most effective interventions tend to be individualized combinations of treatments that are discovered through an iterative process of trial and error (DuPaul, Stoner, & O'Reilly, 2008; Huberty, 2008; Schwartz, 2008).

Just as the diagnosis of mental illness in children is complicated by a number of factors (i.e., multifarious nature of child development, premorbidity/comorbidity, etc.), the treatment of childhood mental illness is complicated by many of these same factors. For example, due to the frequent changes that occur throughout child development, it is common that a treatment plan that is effective at one point in the child's life may no longer be effective later, or visa versa. Additionally, children tend to have more difficulty reporting the details of the effects of treatment in large part due to the fact that they are still developing communication skills and a sense of self-awareness.

***Psychotropic medication.*** A child's pediatrician or pediatric psychiatrist may prescribe psychotropic medication (i.e., antidepressants, antipsychotics, anti-anxiety agents, and stimulants) to treat a number of childhood mental illnesses. These prescription drugs are intended to alter the electrochemical functioning of the central nervous system. Specifically, at the cellular level, these pharmaceutical agents bind with the chemical receptors of the nerve cell thereby increasing or decreasing the cell's ability to send and/or receive electrochemical messages (Kral, LaRosa, Brown, & Kubiszyn,

2006). Thus, the intent of psychotropic medication is to alter the electrochemical processes within the brain.

Prescribing psychotropic medication to school age children for the treatment of psychopathology presents many challenges, some of which are problems inherent in psychotropic medications for both children and adults while others are unique to the treatment of childhood mental illness. Specifically, problems that can arise from prescribing psychotropic medication for the treatment of childhood mental illness include drug side effects, variability of effectiveness, scarcity of empirical data to support use with children, medication management, and communication limitations.

*Drug side effects.* Many children experience a wide range of side effects when taking psychotropic medications (Marsh & Barkley, 2003). While these side effects vary from child-to-child and drug-to-drug they typically range from dry mouth, diarrhea, headaches, and weight gain to diabetes, psychoses, potentially fatal lowered white blood cell count, the induction of mania (Kral, LaRosa, Brown, Kubiszyn, 2006), and increased risk of suicidal ideation (Reinemann, Stark, Molnar, & Simpson, 2006).

*Variability of effectiveness.* The effectiveness of using psychotropic medication to treat childhood mental illness varies from child-to-child and often changes over time. Just as disorders are expressed differently for every child, these drugs tend to work differently for every child. While a psychotropic drug may be extremely effective for one child, for another child with the same condition, it may have no effect or result in unpleasant or dangerous side effects. Additionally, medication that worked for a child at one stage in their life, may not work for them as they mature and enter a new developmental stage (Brown & Sammons, 2002).

*Scarcity of empirical data.* There is a scarcity of empirical data supporting the use of psychotropics with a pediatric population (Walkup, Labellarte, & Ginsburg, 2002). Until recently, research was not conducted on the safety or efficacy of psychotropic medications for the treatment of childhood mental illness, rather clinical trials of medications were conducted with adults but prescribed off-label to the pediatric population. Not until the year 2000, did the U.S. Food and Drug Administration (FDA) mandate safety and efficacy research for any *new* drug intended for use with a pediatric population. Thus, it is common for medications to be prescribed off-label for the treatment of childhood mental illness even though the drug is not specifically approved for the use with a pediatric population or for a specific disorder (Carlson, 2008; Kral, LaRosa, Brow, & Kubiszyn, 2006). There is also a dearth of research on the long-term effects of pediatric use of psychotropic medication on the developing brain (Riddle, Kastelic, Frosch, 2001).

*Medication management.* In order for psychotropic medications to be most effective in treating childhood mental illness, it is vital that the medication be taken as prescribed (e.g., correct dosage, time of day, without missing doses, etc.). This can be very difficult for children who often rely on their caregivers to manage their medication. Thus, parental attitudes toward psychotropic medication may influence the extent to which a young child complies with a medication treatment plan (Brown & Sammons, 2002) and learns strategies for self-management. Furthermore, research indicates that young children comply with their medication treatment plan better than adolescents. This may be due to the fact that adolescents may be solely responsible for deciding whether to take their medication, managing their daily dose, and prescription refills and renewals,



whereas a young child may depend on their parents' compliance (Hamrin, McCarthy, & Tyson, 2010).

*Communication limitations.* The prescription of psychotropic medication for childhood mental illness can be problematic because children may have difficulty describing the physiological or psychological changes they experience while taking the medication (Kral, LaRosa, Brown, Kubiszyn, 2006). This creates a need for increased monitoring and communication between the child's caregivers (i.e., parent, teacher, doctor) in order to evaluate the effects of treatment.

As evidenced by the complexities described above, psychotropic treatment does not guarantee improved outcomes for children. A large body of literature suggests that the effects of medication, both intended and unintended, should be monitored closely (e.g., Brown & Sammons, 2002; Carlson, 2008; MTA Cooperative Group, 2004; Riddle, Kastelic, & Frosch, 2001) within all settings and be shared with the prescribing doctor.

*Psychosocial treatments.* Scores of research provide evidence that behavior and cognitive therapies may be efficacious in the treatment of many childhood mental illnesses (Albano & Kendall, 2002; Kendall, 1992, 2000; Kaslow & Thompson, 1998; Chambless & Hollon, 1998; Costello et al., 2002; Knell, 1993; Miklowitz et al., 2000). Behavior therapy (BT) involves using strategies derived from behavioral principals of classical and operant conditioning such as reinforcing desired or extinguishing negative behavior. Cognitive therapy (CT) involves identifying and altering dysfunctional ideas, cognitions, and attitudes. Thus producing enduring emotional and behavioral change. Cognitive-Behavioral Therapy (CBT) is a combination of BT and CT and aims to teach the child adaptive coping strategies while unlearning dysfunctional behaviors and

thoughts (March, 2002). BT, CT, and CBT can be conducted individually or in groups within the school, family, or community settings (Beck, 1995; Bedrosian & Bozicas, 1994; Beutler et al., 1987; Epstein, Schlesinger, & Dryden, 1988; Freeman, Schrod, Gilson, & Ludgate, 1993). Additionally, research indicates that these therapies are effective for patients of diverse cultural, socio-economic, and educational backgrounds (Beck, 1995; Persons, Burns, & Perloff, 1988).

In order to meet the needs of individuals with varied social-emotional and behavioral problems, there are many types of BT, CT, and CBT. The therapeutic strategy chosen for treatment depends on a number of child factors (e.g., type of social-emotional/behavioral problem, level of cognitive functioning, etc.) as well as the setting in which it is being implemented (e.g., school-based classroom setting, community-based setting, etc.). For instance, behavioral and cognitive interventions for children with ADHD often include behavior management strategies such as token reinforcement systems, daily teacher report cards, and self-monitoring paired with reinforcement (DuPaul, Stoner, & O'Reilly, 2008) while behavioral interventions for children with anxiety often include systematic desensitization, contingency management, and modeling (Ramirez, Feeney-Kettler, Flores-Torres, Kratochwill, & Morris, 2006). There is also a large and growing body of evidence that CBT is effective in treating a number of childhood anxiety disorders (e.g., Albano & Kendall, 2002; Kazdin & Weisz, 1998; Kendall, 1992, 2000; Ollendick, 2006, etc.).

Although the empirical support for psychosocial therapy is increasing, there are a number of challenges in its use for the treatment of childhood mental illness. Within child factors that are related to poor response to psychosocial therapies include low

cognitive functioning, poor insight, and comorbid conditions (McKay, Taylor, & Abramowitz, 2010). Notably, it is vital that a sound diagnosis is made in order to accurately conceptualize the child's problems and effectively identify the most appropriate form of therapy for the child. As discussed earlier, accurate diagnosis requires the integration and interpretation of various sources of data from multiple settings. Also, treatment plans must be tailored to the child's individual needs. For instance, therapy should be modified to address the specific symptoms and problems in social-emotional and behavioral functioning (Beck, 1995). However, when clinicians modify an evidence-based therapy for an individual child's needs, the treatment, while still empirically informed, may revert back to an "experimental" practice (McKay et al., 2010). In addition to the challenges associated with making accurate diagnoses and creating effective treatment plans, in order to obtain optimal results these treatments should be consistently reinforced in every setting within which a child functions which requires extensive training and communication (Glickman, 2009). Another challenge in the effective implementation of psychosocial therapy is the importance for children to have repeated "real-life" opportunities to practice the skills learned in therapy, which requires that the child's caregivers and teachers are knowledgeable about these strategies. In fact, DuPaul, Stoner, and O'Reilly (2008) assert the treatment is most effective when implemented at the point of performance.

Another challenge in using psychosocial therapies to treat childhood mental illness is that although they are effective for many children, they are not effective for all children (Hoffmann, 2009) and it is vital that progress is monitored in order to evaluate effectiveness so that ineffective treatment methods and/or those with adverse side effects

can be adjusted. Intensive monitoring requires that data be collected in multiple settings including a variety of school environments (Carlson, 2008). Thus, communication and collaboration of the various adults in the child's environment is vital.

***Combination treatments.*** While on their own psychotropic medication and psychosocial therapy are empirically supported treatments for childhood mental illness, many researchers posit that treatment programs are most effective when they integrate pharmacological and psychosocial interventions (Brown, 2005; March, 2002; Phelps, Brown, & Power, 2002; Reinemann, Stark, Molnar, & Simpson, 2006). March (2002) purports three reasons for combining medication with psychotherapy: 1) more than one treatment presents an increased 'dose' which may result in faster and enhanced outcomes; 2) comorbidity often necessitates more than one treatment to address the different symptoms associated with more than one condition; and 3) more than one treatment may augment results especially when each treatment provides partial response.

Despite the support for a combined treatment approach, there are a number of challenges for effective implementation. Due to the multiple factors that are manipulated simultaneously in a combination approach to treatment (i.e., biochemical brain function, behavioral, and environmental factors), it can be difficult to evaluate the unique impact of each individual intervention. Although evaluating multiple factors simultaneously presents difficulty, it is essential to do so. In fact, the effects, both intended and unintended, of each intervention must be measured in order to evaluate whether they are being implemented with proper fidelity, intensity, and whether or not the child is making adequate progress (Schwartz & Davis, 2008). Thus, sensitive progress monitoring procedures are vital to the effectiveness of combination treatments to childhood mental

illness. Another challenge to the effective implementation of a combination approach to the treatment of childhood mental illness is that this approach typically involves multiple professionals providing services. For instance, a pediatrician or pediatric psychiatrist may prescribe psychotropic medication, a private therapist may conduct psychosocial therapy, a school psychologist may provide additional psychosocial therapy, and the parent and/or teacher may implement behavior modification strategies. Without collaboration, these uncoordinated interventions will likely be implemented inconsistently and in isolated settings potentially decreasing the effectiveness of treatment.

### **Necessity for Collaboration Between School Psychologists and Community-Based Mental Health Professionals**

The literature described previously in this chapter illustrates the critical need for collaboration between those responsible for promoting the mental health of children. The devastating impact that untreated childhood mental illness has on academic performance and lifelong social-emotional wellbeing, the complexities in making accurate diagnoses of childhood mental illness due to overlapping symptoms and normal variability in child development, the unpredictability of treatment effects such as psychotropic drug side effects in child populations, and the expectation that children function in diverse settings are a few of the reasons that necessitate collaboration between school psychologists and community-based mental health professionals (CBMHPs). As early as the 1960s there was concern about the segregation of community health and human services (Adelman & Taylor, 2010) and, since the 1990s, leaders within the fields of education, psychology, behavioral health, and medicine have identified the need for interdisciplinary

collaboration (e.g., American Academy of Pediatrics Council on Children with Disabilities, 2007; American Psychological Association, 1995; Bradley-Klug et al., 2010; Hardiman, Curcio, & Fortune, 1998; Huberty, 2008; Kral, LaRosa, Brown, Kubiszyn, 2006; March et al., 2007; Nastasi, 2004; National Advisory Mental Health Council's Workgroup on Child and Adolescent Mental Health Intervention Development and Deployment, 2001; Riddle, Kastelic, & Frosch, 2001; Walsh, Brabeck, & Howard, 1999).

In recent years, there has been a shift toward a public health model of mental health service delivery (U. S. Department of Health and Human Services [USDHHS], 1999) which has expanded the concept of mental health service delivery beyond that of assessment, diagnosis, and treatment for individuals experiencing severe impairment, to include mental health promotion and mental illness prevention for all. In addition to the challenges in diagnosis and treatment of childhood mental illness, this shift to a prevention and early intervention-oriented practice provides even more impetus for interdisciplinary collaboration (Nastasi, 2004).

Specific to the field of school psychology, collaboration is widely recognized in the literature as being integral to the profession (NASP Guidelines for the Provision of School Psychological Services, 2008) because in order to address the academic, social-emotional, and medical needs of children coordination across health care, education, and community systems is required (Power, 2000). In fact, in *School Psychology: A Blueprint to Training and Practice III*, Ysseldyke and colleagues (2006) assert “the ability to work constructively and collaboratively with diverse agencies and individuals is indispensable for school psychologists (p. 15)”.

Best practices for collaboration involve employing a group problem solving process whereby a multidisciplinary team works together to systematically identify and analyze a problem, create and implement the least-restrictive plan, and evaluate the efficacy of the plan, making adjustments and repeating the process, when necessary (Tilly, 2008). When executed with integrity, this process increases the likelihood that students are provided with interventions (e.g., intensive instruction, behavioral supports, psychosocial therapy, medication, etc.) that align with the presenting problem and result in the desired outcome (Ysseldyke et al., 2006).

**Roles of Community-Based Mental Health Professionals.** CBMHPs including psychiatrists, psychologists, neurologists, licensed mental health counselors, therapists, social workers, mental health case managers, and pediatricians who work for either a public or private organization have important and diverse roles in improving outcomes for children with mental illness. CBMHPs have many significant roles that benefit from collaboration with school psychologists. Among many other services pediatricians often provide screening, early identification, and diagnosis of mental health concerns in children. Often pediatricians will refer patients with specific and/or severe symptoms to specialists such as psychiatrists and neurologists. Neurologists, psychiatrists, and private psychologists often conduct diagnostic assessment, develop treatment plans, and make educational recommendations. Psychiatrists as well as pediatricians and other medical doctors conduct medication evaluations and prescribe medication to treat childhood mental illness. Also, many private psychologists and licensed mental health counselors implement treatment plans such as individual and/or group psychosocial therapy for children with mental illness and their families. Social workers and mental health case

managers often work with children with mental illness and their families to identify community resources and coordinate community services. Clearly, CBMHPs have diverse, yet often overlapping, roles in supporting children with mental illness.

**Unique Roles of School Psychologists.** Shaw (2003) posits that school psychologists have many important roles that benefit from collaboration with CBMHPs. When in collaboration with pediatricians or pediatric psychiatrists, school psychologists can serve as a liaison between educational and medical systems. With knowledge of these systems, school psychologists are able to inform medical staff about policies and functions of the educational system, educational personnel about that of the medical system, and serve as an advocate for children and families (Drotar, 1995). In addition to serving as a school-medical system liaison, school psychologists are also poised to serve as an educator to other educational personnel and parents. School psychologists have the skills necessary to provide professional development and consultation regarding the assessment, treatment, and progress monitoring of students with mental illness. Also, they are well equipped to provide parent education classes and private consultation in an effort to assist families find additional community-based mental health services (Shaw, 2003). Another appropriate role of the school psychologist is to complement the work of community-based psychologists and counselors by providing counseling to students on issues such as medication management (Sabbeth & Stein, 1990), pregnancy (Peak & Hauser McKinney, 1996), and crisis counseling (Poland, 1989). Furthermore, Shaw (2003) proposes that school psychologists are in a unique position to collaborate with interdisciplinary professionals taking on a case manager role to coordinate services. As Stock and colleagues (1997) describe, it is often inefficient and even counterproductive to



have multiple therapies without coordination. This coordination of services is vital to creating efficient treatment plans that avoid redundant services and maximize the amount of instructional time children receive.

### **Benefits of Collaboration Between School Psychologists and CBMHPs.**

Collaboration between school psychologists and CBMHPs has the potential to generate unique and powerful benefits for children with mental illness. First and foremost, school psychologists and CBMHPs are in prime positions to collect data on a child's social-emotional functioning across diverse settings (Kubiszyn, 1994). Shared data has the potential to increase the efficacy and accuracy of the diagnosis and to assist with the identification of evidence-based treatments for both community and school settings. Additionally, collaboration has the potential to result in both increased treatment integrity and increased capacity to monitor treatment.

*Collection and sharing of data.* Collaboration between school psychologists and CBMHP is beneficial because it has the potential to result in more comprehensive data collection. School psychologists are in a key position to collect data on the social-emotional and behavioral functioning of children (Christ, 2008). Since children spend much of their time in school, that is where a child's behavior can be observed in the natural environment and in both structured and unstructured settings. School psychologists are well equipped to collect these data based on training (i.e., data-based decision making) and are in a position to play an integral role in collecting data using multiple methods from a variety of settings and sources (i.e., educational record reviews, rating scales from teachers and parents, interviews, psychoeducational assessments, observations in multiple academic and social settings-both structured and unstructured).

Furthermore, CBMHPs with expertise in particular domains of childhood mental illness are in an ideal position to collect condition-specific data. When shared and integrated through collaboration, these data collected by the school psychologists and the CBMHPs can lead to a comprehensive, enhanced, and accurate understanding of a child's strengths, limitations, and dysfunction (Carlson, 2008; HaileMariam, Bradley-Johnson, & Johnson, 2002).

***Effective treatment linked to accurate diagnosis.*** Integrated data collected from multiple sources, across settings, using a variety of methods provides practitioners with comprehensive knowledge of a child's cognitive and social-emotional strengths, weaknesses, and dysfunction, resulting in accurate identification of the problem and diagnoses (Batsche, Castillo, Dixon, & Forde, 2008). Due to the fact that mental illnesses require different treatment approaches, increasing the accuracy of diagnosis is a considerable benefit of collaboration because it increases the likelihood that a treatment plan is linked to the child-specific problem. Through collaboration, school psychologists and CBMHPs can increase the specificity with which they describe a problem that a child experiences. This, in turn, will increase the likelihood that a treatment plan will be developed that is tailored to a child's specific need.

***Increased treatment integrity.*** Another reason that collaboration between CBMHPs and school psychologists is beneficial is the potential to increase treatment integrity. While many treatments are effective only when they are carried out as intended, there are many barriers for children, caregivers, and teachers in doing so. Collaboration between school psychologists and CBMHPs has the potential to increase treatment integrity because coordinated efforts have the potential to provide children and their

families with more comprehensive supports. School psychologists are in a position to provide initial and ongoing psychoeducational support to students, their teachers, and caregivers linking the community-based support with school and home supports. In other words, collaboration increases the probability that interventions are carried out the way they were intended. Examples include explaining the importance of treatment compliance, trouble-shooting barriers to treatment compliance, and explaining the evidence base for treatment (Power, Kendall, & Krain, 2003). By engaging in bi-directional communication, school psychologists and CBMHPs will be able to encourage students to implement their treatment plan as intended whether it is taking the prescribed dose of medication at the proper time of day, employing cognitive/behavioral strategies in specific situations, or both.

In addition to encouraging students to implement their treatment plan as intended, collaboration between school psychologists and CBMHPs will also help parents and teachers implement interventions with consistency and accuracy (i.e., administration of medication, implementation of classroom behavior plans, etc.). School psychologists are in a prime position to collect data on intervention implementation integrity.

Collaborating with CBMHPs will make school psychologists aware of the specific components of the established interventions. With this awareness, school psychologist can collect data, or teach others to collect data, on whether the intervention is being implemented by the teacher, parent, child, or other responsible parties as it was intended. This oversight will allow for more accurate evaluation of the intervention's effectiveness.

***Increased capacity to monitor treatment effects.*** Collaboration between school psychologists and CBMHPs will allow for increased capacity to monitor the effects of

intervention (Carlson, 2008). This is tremendously important because of the variability of treatment effects among children with mental illness. School psychologists will be able to use the initial assessment data as a baseline for a child's social-emotional and academic functioning and, in cooperation with teachers and other school personnel, will be able to continue to collect data to monitor student progress as well as any unintended side effects. Without effective collaboration with CBMHPs, school psychologists may not be aware of target behaviors or treatment specifics, and thus will not be informed enough to collect relevant data and expand the capacity for monitoring the effects of intervention into the school setting. As children spend significant amounts of time in the school setting, the inability to monitor the effects of interventions in this setting not only presents an enormous missed opportunity, but could actually hinder effective treatment and extend the time needed to determine the most appropriate interventions.

Collaboration between school psychologists and CBMHPs who prescribe psychotropic medication is critical for effectively monitoring medication effects. While school psychologists are skilled in evaluating the academic and social-emotional functioning of youth, interpreting these data considering the impact of medication dosage, side effects, and other environmental variables often requires coordinated efforts (Shaw & Woo, 2008). By collecting frequent data on the effects of medication and sharing the results with medical professionals and parents, collaboration between CBMHPs and school psychologists enable informed decisions about a child's psychotropic treatment to be made. This potentially decreases the length of time it takes to find an effective psychotropic treatment plan and may decrease the negative side effects. Additionally, by collecting frequent data on the effects of psychosocial therapy

and sharing it with the child's community-based therapist, the therapist will be in a position to make more informed decisions about whether the therapy is working or if it needs to be adjusted to better meet the needs of the individual child.

*Miscellaneous benefits.* Collaboration between school psychologists and CBMHPs also has a number of miscellaneous benefits, including a decrease in duplication of services. For instance, if a child is already receiving psychosocial therapy in a community based setting, a school psychologist may reinforce the therapy through ongoing, yet brief, conversations with the student during non-instructional times rather than pulling the student from valuable instructional time to receive redundant psychosocial therapy. This collaboration frees up school psychologists to provide services to others, increases student instructional time, and reduces redundancy. Also, this collaboration allows for school psychologist to gain awareness about current practices, best practices, and empirically supported practices that occur in community-based settings while informing CBMHPs about those practices occurring in school-based settings. This mutual awareness will allow both school-based and community-based practitioners to provide improved services to children and families as they will be able to anticipate and problem-solve with a more comprehensive understanding of the various environments and systems in which a child is expected to function (Adelman & Taylor, 1999). Moreover, through collaborative efforts, school-based and community-based practitioners are able to build on the resources of one another and provide enhanced integrated services to children. It has been suggested by national policymakers that limited school and community resources could be leveraged through the collaboration and coordinated efforts of school psychologists and CBMHPs (Doll & Cummings, 2008).

It is well known that many interacting systems influence a child's social-emotional and academic development, and that collaboration among them may optimize outcomes for children (Adelman & Taylor, 1999). Cross-disciplinary professional organizations such as the National Association of School Psychologists (1995), the American Psychological Association (1995), the American Academy of Pediatricians (2007), the Accreditation Council for Graduate Medical Education (Cubic & Gatewood, 2008), and the American Psychological Association Practice Organization (2009), emphasize that interrelated solutions require collaboration (Adelman & Taylor, 2010). It has been suggested that collaboration can improve access to services, increase support for learning and for addressing barriers to learning, create opportunities for learning and development, and generate new approaches to strengthen connections between family, school, and community settings. Appropriate and effective collaboration and teaming are critical factors in promoting well-being and self-sufficiency (Adelman & Taylor, 2010).

**Known Barriers to Collaboration between School Psychologists and CBMHPs.** Despite this emphasis on collaboration, recent survey data suggests that school psychologists spend a relatively small portion of their time in collaboration (Reschly & Wilson, 1995). Although there is a dearth of evidence in the professional literature (e.g., professional journals) to suggest that school psychologists are working collaboratively with CBMHPs some research suggests that collaboration could occur more often (Davis, Montford, & Read, 2005; Nastasi, 2004). As described by Adelman and Taylor (2010), "schools are located in communities but often are islands with no bridges to the mainland (p. 217)." Coordination is inadequate between school and

community settings (Doll & Cummings, 2008) and school-based and community-based practitioners typically function in isolation of the other (Doll & Cummings, 2008).

**Collaboration Literature.** Although there is a scarcity of research on the collaboration between school psychologists and CBMHPs, there are a number of studies that have investigated collaborative practices across educational and health systems with the goal of promoting the social/emotional, behavioral, and academic well-being of children. The following section provides a brief overview of findings from this research.

Bradley-Klug and colleagues (2010) investigated the communication and collaboration between pediatricians and school personnel (e.g., teachers, school psychologists, school nurses, guidance counselors, etc.). More specifically, they surveyed a national sample of pediatricians belonging to the American Academy of Pediatricians (n=570) to examine the frequency of their communication and collaboration with school personnel, their preferred methods of communication, and their perceptions of the barriers and benefits of collaboration with school personnel. For the purpose of differentiating between communication and collaboration, they operationally defined communication as a one-time, unidirectional sharing of information regarding patient status whereas collaboration was defined as the ongoing, bi-directional sharing of information by two or more people who are working together in planning and problem-solving to promote positive outcomes for a third party. Results of this study suggest that although the majority of respondents (75%) ranked collaboration with school personnel as very beneficial, communication and collaboration between pediatricians and schools does not occur very often. Fifty-four percent of pediatricians reported communicating with school personnel a few times per year or less. Additionally, 60% of respondents

reported that they were collaborating with school personnel, however, most respondents (38.3%) reported only collaborating with school personnel a few times per year. Phone calls and written reports were identified as the preferred methods of communication (37% and 22.2%, respectively). More than 50% of the respondents reported that the purpose of communicating with school personnel is to request patient information, provide diagnostic information, and discuss an intervention or treatment plan. Also, statistically significant relationships were found between the age of the respondent and the frequency of collaboration as well as between years of practice and the frequency of collaboration.

Findings from this study indicate that older pediatricians and those with more experience were more likely to collaborate than younger and less experienced pediatricians. Reported benefits of collaboration included improve patient outcomes, cross-disciplinary problem-solving, assessing patient progress across settings, sharing resources, avoiding duplication of services, and feeling valued for expertise. Reported barriers to collaboration included not having enough time in the day, finding school personnel inaccessible, not being able to obtain reimbursement for collaborating, not knowing with whom to collaborate, differing views on child development, compliance with the Health Insurance Portability and Accountability Act (HIPAA), and the belief that collaboration was not beneficial to their practice. Additional statistically significant relationships were found between these barriers and whether or not the respondents engaged in collaboration with school personnel. Limitations of this study were that responses may have been influenced by participants' perceptions of social desirability and inaccurate retrospective reporting. Additionally, due to the low response rate (29%) the sample may not be representative of all pediatricians.



Gerdes, Yuen, Wood, and Frey (2001) examined the strength of collaborative relationships between doctors (i.e., primary care providers (PCPs)) and mental health providers (MHPs). Specifically, they analyzed factors such as type, timing, and frequency of collaboration as well as trust and communication between parties. They analyzed data collected from a survey of primary care providers (n=325) within an integrated health care system located in central Pennsylvania. Results of this study indicate that 46% of PCPs communicated with MHPs periodically but 10% reported having no communication with MHPs. Forty-two percent of PCPs were likely to have an established relationship with a MHP whereas 31% were unlikely to have an established relationship. Additionally, after referring a patient to a MHP, 84% of PCPs reported receiving a written report and 46% reported phone or email communication about the patient. Results from a factor analysis of PCP responses revealed that relationship quality, PCP attitudes about managing mental health conditions, and the frequency of PCP/MHP collaboration were the three primary dimensions of collaboration. Limitations of the study were that the survey return rate may have been higher for PCPs with an interest in mental disorders, and the measures of collaboration were not externally validated.

Another study conducted by Yung and colleagues (2004) surveyed public mental health professionals (n=105) and private psychiatrists (n=103) in Melbourne, Australia in order to assess their collaborative practices, identify potential barriers to collaboration, and outline opportunities to increase collaboration. Results showed that both public and private professionals supported the concept of collaboration, however, private psychiatrists were generally less supportive of collaboration than public mental health

professionals. Both groups indicated that barriers to collaboration include difficulty communicating, confusion of roles and responsibilities, and different treatment approaches.

A study by Darlington and colleagues (2005) utilized a self-administered, cross-sectional survey to examine the factors that impact collaboration between child protection services and mental health services on behalf of children having a parent with mental illness in Queensland, Australia. They found that while 63% of mental health professionals reportedly contacted child protection agency on behalf of a child, most (90%) had done so fewer than 6 times. This indicated that although there is a moderate amount of interagency communication occurring, bi-directional collaboration seems to be lacking. Principle components analysis and multivariate analysis of variance (MANOVA) identified factors that impacted attitudes toward collaborative practices: trust, positive regard for the other professional, and training. The same procedure identified gaps in interagency processes, inadequate resources, lack of knowledge of professional domains and boundaries, unrealistic expectations, and confidentiality as potential barriers to collaboration.

A similar study conducted by Drabble (2007) surveyed 350 professionals in child welfare and substance abuse treatment fields in California to find the similarities and differences in values and perceived capacity for collaboration. Findings suggested that similarities (e.g., priorities for services) and differences (e.g., planning and measurement of outcomes) in value systems may respectively facilitate or hinder interdisciplinary collaboration. Another finding of this study was that professionals working in organizations with a strong history of collaboration were more likely to report the

occurrence of collaborative practices than those with weaker records of intersystem collaboration.

Investigations of collaborative school-based teaming have revealed important methods for effective collaborative partnerships (Damore & Murray, 2009; Fleming & Monda-Amaya, 2001; Villa, Thousand, Meyers, & Nevin, 1996). Fleming and Monda-Amaya (2001) used a Delphi procedure to assess critical factors that support collaborative efforts. Data collected from 109 individuals who were identified as experts in teaming suggests that the success of any partnership is dependant on superior communication regarding key variables, including team member roles, prioritized goals, trust and respect, clearly understood procedures, internal evaluations of outcomes, and modifications of outcomes when needed (Fleming & Monda-Amaya, 2001).

More recent data collected by Damore and Murray (2009) to assess the perceptions of general and special educators engaged in collaborative teaching using the Collaborative Teaching Survey found that interpersonal communication skills and procedural factors were perceived as important for effective collaboration. This study utilized a convenience sample of 20 elementary schools throughout the city of Chicago where surveys were randomly distributed to 200 teachers.

Investigations of the general collaborative practices of school psychologists have identified a number of barriers. These barriers include impaired communication (Drotar, Palmero, & Barry, 2004), different educational and mental health diagnostic systems (Shaw & Woo, 2008), the use of profession-specific vocabulary (i.e., jargon; Foy & Earls, 2005; Shaw, Clayton, Dodd, & Rigby, 2004), lack of proper training, physical distance, a scarcity of time, integration of data from multiple sources with diverse

perspectives (Carlson, 2008), and rights to privacy (Nastasi, Varjas, Moore, & Bernstein., 2003). While this data provides insight into the obstacles to collaboration in general, it lacks situation-specific information about the practices and perceptions of school psychologists in regard to collaboration with CBMHPs on behalf of students with mental illness.

## **Conclusion**

Considering the benefits of interdisciplinary collaboration, the suggested lack of collaborative practices between school psychologists and CBMHPs, and the scant evidence of this type of collaboration in the professional literature, the current study aimed to collect data from school psychologists to investigate their current practices and experiences communicating and collaborating with CBMHPs on behalf of students with mental illness. The goal of this study was to gain a better understanding of the collaborative practices between school psychologists and CBMHPs in order to develop strategies for maximizing communication and collaboration, which can in turn be implemented by school psychologists and trainers of school psychology.

## **Chapter Three**

### **Methods**

This chapter will describe the methods that were used to collect data for the study. The following facets of the study will be described in this order: (a) participants; (b) materials needed for the study; (c) procedures to carry out the study; (d) analyses to answer the research questions; (e) limitations of the study; and (f) contributions to the literature.

#### **Participants**

Participants for this study consisted of practicing school psychologists from the 2010-2011 Florida Association of School Psychologists (FASP) membership directory. At the time of the proposal of the current study, the primary investigator was told by a FASP administrator that there were approximately 700 members. However, the actual FASP membership directory only contained approximately 575 members. Furthermore, according to the FASP membership records, a total of 301 school psychologists were not currently working in public schools or were not currently working in a practitioner capacity (e.g., retired or not working in a school setting). These non-practicing school psychologists were removed from the participant list. Additionally, a post-office screening of the FASP member addresses identified 4 addresses that were unusable. Initially, the goal for this study was to mail at least 446 surveys in order to obtain a usable response rate of at least 35%. In order to arrive at this specific number of

surveys, a power analysis was conducted utilizing Cohen's (1988) guidelines for a 3 group ANOVA and for a multiple regression containing 4 predictor variables with a medium effect size and an alpha level of 0.05. A minimum return rate of 35% yielding 156 surveys (i.e., approximately 52 respondents in each of 3 groups for the ANOVA which is larger than the required 84 respondents for the multiple regression) was likely to result in adequate power ( $> .80$ ). However, due to the smaller than anticipated FASP membership database only 270 surveys were mailed to participants and the usable response rate was calculated by dividing the number of usable surveys returned by the number of mailed surveys and multiplying the quotient by 100. Ninety surveys were returned out of a possible 270, yielding a 33% return rate. Ten surveys were excluded from data analysis because the respondents indicated that they did not currently work in schools (e.g., retired, district administrator, etc.). The final dataset yielded a useable total sample of 80 surveys.

### **Sample Demographic Characteristics**

The study sample was comprised of 80 respondents between the ages of 27 and 64 ( $M=48.4$ ,  $SD=10.5$ ). The demographic characteristics of the sample are displayed in Table 1 as well as comparison demographic characteristics of members of the National Association of School Psychologist (Curtis et al., 2008). The sample of school psychologists in the current study approximates the national sample.

Table 1  
*Comparison of Demographic Characteristics of Current Study Sample of School Psychologists (N=80) and a National Sample of NASP Members (N=1,748)*

Variable	Current Study		NASP Members (%)
	n	%	
Gender			
Male	17	21%	26%
Female	63	79%	74%
Ethnicity*			
Hispanic or Latino	7	9%	3.0%
Not Hispanic or Not Latino	30	36%	NA
Not Reported	43	54%	NA
Race			
American Indian or Alaska Native	0	0%	.8%
Asian	1	1%	.9%
Black or African American	5	6%	1.9%
Native Hawaiian or Other Pacific Islander	0	0%	NA
White	71	90%	92.6%
Other	2	3%	.8%

*Note.* NA represents when data were not available for the NASP sample. The categories of ethnicity from the NASP study differ from those of the current study, which follow the 2010 US census categories.

## Materials

A cover letter explaining the purpose of the current study, detailing the estimated time to complete the survey, and providing the principal investigator's (PI) contact information was included with the survey (Appendix A).

The Communication and Collaboration with Community-Based Mental Health Professionals (CC) survey (Appendix B) was designed to investigate the current practices and experiences of practicing school psychologists in Florida relative to their communication and collaboration with CBMHPs on behalf of students with mental illness. The completed survey consisted of 38 open- and closed-response format questions divided into four sections: communication with CBMHPs, collaboration with CBMHPs, demographic information, and school information. The order of the questions on the survey followed guidelines set forth by Dillman, Smyth, and Christian (2009), which include grouping similar questions together and selecting initial questions that are

interesting and reflect the purpose of the survey as it had been explained to the respondent on the cover letter.

The first section of the CC survey contained 10 multiple-choice questions eliciting information on school psychologists' communication with CBMHPs. A definition of the term communication was provided at the beginning of the section: 'Communication refers to a one-time, unidirectional sharing of information on behalf of students.' Examples may include a phone call or a letter sent to a CBMHP. Respondents were directed to indicate with which CBMHPs they have communicated during the 2010-2011 school year (e.g., psychiatrists, pediatricians, neurologists, psychologists, social workers, counselors, case managers, and other) as well as how often (e.g., one to four times a year, five to nine times a year, once a month, two to three times a month, once a week, and more than once a week) and for what purposes they have communicated with CBMHPs on behalf of students. Additionally, respondents were directed to provide information on their preferred method of communication.

The second section of the CC survey contained 9 multiple-choice questions assessing school psychologists' collaborative practices with CBMHPs. In order to differentiate the items in this section from the previous section, a definition of the term collaboration was provided: 'Collaboration refers to the ongoing, bi-directional sharing of information by two or more people who are working together in planning and problem-solving to promote positive outcomes for a student or students.' An example of collaboration may include when ongoing consultation occurs between a school psychologist and a CBMHP to coordinate treatment and/or intervention efforts. Similar to the communication section, respondents were directed to indicate with which



CBMHPs they have collaborated during the 2010-2011 school year (e.g., psychiatrists, pediatricians, neurologists, psychologists, social workers, counselors, case managers, and other) as well as how often (e.g., one to four times a year, five to nine times a year, once a month, two to three times a month, once a week, and more than once a week) and for what purpose they have collaborated with CBMHPs on behalf of students. Finally, respondents' perceptions of the benefits and barriers of collaboration with CBMHPs were assessed.

The third section of the CC survey contained 11 questions pertaining to professional background and demographic characteristics. Respondents were asked to report data regarding their gender, year of birth, race, ethnicity, training, and students served. This section collected data used to assess whether the frequency of collaboration between school psychologists and community-based mental health professionals is predicted by the percentage of students the school psychologist serves with various mental disorders.

The fourth section of the CC survey contained 8 questions pertaining to characteristics of the school or schools served by the school psychologist. Specifically, for each school in which they work, respondents were asked to report data such as the school type (e.g., public, private), the title 1 status, and the grade levels of students served. The demographic and school information sections were used to assess whether collaborative practices differ as a function of the training and experience of the school psychologist, the socio-economic status of the student population served by the school psychologist, the number of students served by the school psychologist, and the geographic characteristics of the community in which the students reside (i.e., urban,

suburban, rural). Respondents were also offered the opportunity to provide additional comments or feedback regarding collaboration between school psychologists and CBMHP at the end of the survey. These responses were recorded verbatim in the study database.

## **Procedures**

The first step in conducting this study was to develop the survey itself. With the guidance of an expert panel comprised of thesis committee members, graduate students in school psychology, field-based school psychologists, and the recommendations made by Dillman, Smyth, and Christian (2009), the principal investigator of this study developed the CC survey by modifying similar surveys designed by Bradley-Klug and colleagues (2010) to assess the collaborative practices of pediatricians and school psychologists. In addition, survey design and measurement experts were consulted. Two think-aloud cognitive interviews were conducted with potential survey respondents to evaluate whether the questions are interpreted as intended and to identify wording, question order, visual design, and navigation problems in the complete questionnaire. When necessary, revisions were made to questions and response options. Additionally, the survey was reviewed by one CBMHP and piloted by two local school psychologists to assess the clarity of questions and response options. Feedback on the approximate length of time required to complete the survey was also requested. When necessary, additional revisions were made to questions and response options.

Approval to conduct the study was obtained from the University of South Florida (USF) Institutional Review Board (IRB) prior to commencement of data collection. This assists in ensuring that all possible and necessary precautions were taken to protect

human research participants. Approval from the Florida Association of School Psychologists (FASP) was obtained as well. Upon approval from FASP, the electronic FASP membership database of member mailing addresses was obtained. The surveys were mailed to participants in two separate mailings three weeks apart in the spring of 2011. Participants received a cover letter detailing instructions for completion, the CC survey, and a pre-paid/pre-addressed return envelope with an assigned code. In order to maintain confidentiality, each participant was assigned a code allowing for tracking which participants responded and did not need to be mailed a second survey. The returned survey was considered as consent to participate. As surveys were returned, data was entered into an Excel spreadsheet created by the principal investigator. Once all surveys were entered, data checks were conducted on every tenth survey to evaluate data entry accuracy. When an error was found, the survey entered prior to and after the randomly selected survey was also checked for errors. All errors were recorded in a separate error log in order to report the results. When incomplete surveys were received, data were entered into the database and flagged for tracking purposes. Once all data were collected, a frequency count summarizing the missing data was generated. These missing data were analyzed to determine if the missing values were from respondents who are systematically different from respondents who provided complete data. A determination about how to use missing data was made based on this initial analysis. Data were analyzed using the Statistical Analysis System (SAS; Cody, 1997).

### **Review of Data Analysis Plan**

In order to answer the research questions of the current study, the data were analyzed using the following procedures:

**Research question 1.** What is the frequency of communication and collaboration between school psychologists and community-based mental health professionals on behalf of students with mental health problems?

To address the communication component of this research question, responses to item 2 which asked “During the 2010-2011 school year, how often have you communicated with CBMHPs on behalf of students?” were examined. To address the collaboration component of this research question, responses to item 12 which asked “During the 2010-2011 school year, how often have you collaborated with CBMHPs on behalf of students?” were examined. Descriptive statistics are reported. Specifically, mean, mode, standard deviation, skewness, kurtosis, and percentage of respondents who select each response category are reported for each variable. To calculate the mean for the communication and collaboration variables, frequencies are represented by the following values: 0=Never, 1=One to Four Times a Year, 2=Five to Nine Times a Year, 3=Once a Month, 4=Two to Three Times a Month, 5=Once a Week, 6=More than Once a Week. Confidence intervals were calculated around the means and the percentage of respondents who select each response category.

**Research question 2.** With which type of community-based mental health professionals are school psychologists communicating and collaborating?

To address the communication component of this research question, responses to item 1 which asked “During the 2010-2011 school year, with which community-based mental health professionals have you communicated on behalf of students with mental health problems?” were examined. To address the collaboration component of this research question, responses to item 11 which asked “During the 2010-2011 school year,

with which CBMHPs have you collaborated on behalf of students with mental health problems?” were examined. Descriptive statistics are reported. Specifically, the modes as well as the percentage of respondents who select each response category are reported. Additionally, confidence intervals were calculated around these percentages.

**Research question 3.** What is the nature and purpose of communication and collaboration between school psychologists and community-based mental health professionals?

To address the communication component of this research question, responses to items 3-7 which asked “During the 2010-2011 school year, how often have you communicated with CBMHPs to provide information about a student, to obtain information about a student, to inform the development of interventions, to plan for progress monitoring, and to make a referral for community-based treatment?” were examined. To address the collaboration component of this research question, responses to items 13-16 which asked “During the 2010-2011 school year, how often have you collaborated with CBMHPs to develop coordinated interventions, to progress monitor, to evaluate interventions, and to modify interventions?” were examined. Descriptive statistics are reported. Specifically, mean, mode, standard deviation, skewness, kurtosis, and percentage of respondents who select each response category are reported for each variable. To calculate the mean for the communication and collaboration variables, frequencies are represented by the following values: 0=Never, 1=One to Four Times a Year, 2=Five to Nine Times a Year, 3=Once a Month, 4=Two to Three Times a Month, 5=Once a Week, 6=More than Once a Week. Confidence intervals were calculated around the means and the percentages of respondents who select each response category.

**Research question 4.** What methods do school psychologists most frequently utilize to communicate with community-based mental health professionals?

- a. What are the preferred methods of communication?

To address this research question, responses to item 10 which asked “What is your most preferred method of communication with CBMHPs?” were examined.

Descriptive statistics are reported. Specifically, the modes as well as the percentage of respondents who select each response category are reported. Additionally, confidence intervals were calculated around these percentages.

- b. What are the most effective methods of communication?

To address this research question, responses to items 8 and 9 which asked “In your professional experience, what have you found to be the most effective method of providing information to CBMHPs and obtaining information from CBMHPs?” were examined. Descriptive statistics are reported. Specifically, the modes as well as the percentage of respondents who select each response category are reported. Additionally, confidence intervals were calculated around these percentages.

**Research question 5.** What do school psychologists perceive as the benefits and barriers of collaboration with community-based mental health professionals?

To address the perceived benefits component of this research question, responses to item 17 which asked “What are the benefits of collaboration with CBMHPs?” were examined. To address the barriers component of this research question, responses to item 18 which asked “What are the barriers to collaboration with CBMHPs?” were examined. Descriptive statistics are reported. Specifically, the modes as well as the percentage of

respondents who select each response category are reported. Additionally, confidence intervals were calculated around these percentages.

**Research question 6.** Does the frequency of communication/collaboration between school psychologists and community-based mental health professionals relate to:

- a. the graduate training of the school psychologist?

To address this research question, participants were sorted into subgroups based on highest degree earned (e.g., Masters, Specialist, and Doctorate) reported on item 24. Descriptive statistics are reported. Specifically, the modes as well as the percentage of respondents who select each response category are reported. Additionally, confidence intervals were calculated around these percentages. To address the communication and collaboration components of this question, frequency data are reported for items 2 and 12, respectively. For the purpose of analysis, communication and collaboration frequencies are represented by the following values: 0=Never, 1=One to Four Times a Year, 2=Five to Nine Times a Year, 3=Once a Month, 4=Two to Three Times a Month, 5=Once a Week, 6=More than Once a Week. The mean responses for the communication and collaboration frequencies were calculated for each subgroup. Subgroup means and confidence intervals are reported. To determine if the frequency of communication and collaboration differ depending on the graduate training of school psychologists, differences in mean scores were compared using an ANOVA or Welch's ANOVA. Follow-up Tukey tests were conducted for all significant group differences. The mean differences, confidence intervals around these differences, and effect sizes are reported. Data were screened for outliers and possible violations of the assumptions underlying ANOVA.

**b. the ongoing training of the school psychologist?**

To address this research question, participants were sorted into subgroups based on the number of hours of professional development (i.e., 0 hours, 1-10 hours, more than 10 hours) reported on item 30. Descriptive statistics are reported. Specifically, the modes as well as the percentage of respondents who select each response category are reported. Additionally, confidence intervals were calculated around these percentages. To address the communication and collaboration components of this question, frequency data are reported for items 2 and 12, respectively. For the purpose of analysis, communication and collaboration frequencies are represented by the following values: 0=Never, 1=One to Four Times a Year, 2=Five to Nine Times a Year, 3=Once a Month, 4=Two to Three Times a Month, 5=Once a Week, 6=More than Once a Week. The mean responses for the communication and collaboration frequencies were calculated for each subgroup. Subgroup means and confidence intervals are reported. To determine if the frequency of communication and collaboration differ depending on the graduate training of school psychologists, differences in mean scores were compared using an ANOVA or Welch's ANOVA. Follow-up Tukey tests were conducted for all significant group differences. The mean differences, confidence intervals around these differences, and effect sizes are reported. Data were screened for outliers and possible violations of the assumptions underlying ANOVA.

**c. the years of experience of the school psychologist?**

To address this research question, participants were sorted into subgroups based on number of years of experience (e.g., 1-5, 6-10, more than 10) reported on item 25. Descriptive statistics are reported. Specifically, the modes as well as the percentage of



respondents who select each response category are reported. Additionally, confidence intervals were calculated around these percentages. To address the communication and collaboration components of this question, frequency data are reported for items 2 and 12, respectively. For the purpose of analysis, communication and collaboration frequencies are represented by the following values: 0=Never, 1=One to Four Times a Year, 2=Five to Nine Times a Year, 3=Once a Month, 4=Two to Three Times a Month, 5=Once a Week, 6=More than Once a Week. The mean responses for the communication and collaboration frequencies were calculated for each subgroup. Subgroup means and confidence intervals are reported. To determine if the frequency of communication and collaboration differ depending on the graduate training of school psychologists, differences in mean scores were compared using an ANOVA or Welch's ANOVA. Follow-up Tukey tests were conducted for all significant group differences. The mean differences, confidence intervals around these differences, and effect sizes are reported. Data were screened for outliers and possible violations of the assumptions underlying ANOVA.

**d.** the socio-economic status of the student population served by the school psychologist?

To address this research question, participants were sorted into two subgroups based on the socio-economic status of the students they serve (i.e., whether they serve all Title 1 schools or not all Title 1 schools) which will be reported on item 35. Descriptive statistics are reported. Specifically, the modes as well as the percentage of respondents who select each response category are reported. Additionally, confidence intervals were calculated around these percentages. To address the communication and collaboration

components of this question, frequency data are reported for items 2 and 12, respectively. For the purpose of analysis, communication and collaboration frequencies are represented by the following values: 0=Never, 1=One to Four Times a Year, 2=Five to Nine Times a Year, 3=Once a Month, 4=Two to Three Times a Month, 5=Once a Week, 6=More than Once a Week. The mean responses for the communication and collaboration frequencies were calculated for each subgroup. Subgroup means and confidence intervals are reported. To determine if the frequency of communication and collaboration differ depending on the graduate training of school psychologists, differences in mean scores were compared using an ANOVA or Welch's ANOVA. Follow-up Tukey tests were conducted for all significant group differences. The mean differences, confidence intervals around these differences, and effect sizes are reported. Data were screened for outliers and possible violations of the assumptions underlying ANOVA.

e. the number of students served by the school psychologist?

To address this research question, participants were sorted into subgroups based on number of students served by the school psychologist (e.g., <500, 500-999, 1000 or more) reported on item 27. Descriptive statistics are reported. Specifically, the modes as well as the percentage of respondents who select each response category are reported. Additionally, confidence intervals were calculated around these percentages. To address the communication and collaboration components of this question, frequency data are reported for items 2 and 12, respectively. For the purpose of analysis, communication and collaboration frequencies are represented by the following values: 0=Never, 1=One to Four Times a Year, 2=Five to Nine Times a Year, 3=Once a Month, 4=Two to Three Times a Month, 5=Once a Week, 6=More than Once a Week. The mean responses for

the communication and collaboration frequencies were calculated for each subgroup. Subgroup means and confidence intervals are reported. To determine if the frequency of communication and collaboration differ depending on the graduate training of school psychologists, differences in mean scores were compared using an ANOVA or Welch's ANOVA. Follow-up Tukey tests were conducted for all significant group differences. The mean differences, confidence intervals around these differences, and effect sizes are reported. Data were screened for outliers and possible violations of the assumptions underlying ANOVA.

- f. the type of community where the majority of the students served by the school psychologist reside (e.g., urban, suburban, rural)?

To address this research question, participants were sorted into subgroups based on the type of community where the majority of their students reside (i.e., urban, suburban, rural) which will be reported on item 31. Descriptive statistics are reported. Specifically, the modes as well as the percentage of respondents who select each response category are reported. Additionally, confidence intervals were calculated around these percentages. To address the communication and collaboration components of this question, frequency data are reported for items 2 and 12, respectively. For the purpose of analysis, communication and collaboration frequencies are represented by the following values: 0=Never, 1=One to Four Times a Year, 2=Five to Nine Times a Year, 3=Once a Month, 4=Two to Three Times a Month, 5=Once a Week, 6=More than Once a Week. The mean responses for the communication and collaboration frequencies were calculated for each subgroup. Subgroup means and confidence intervals are reported. To determine if the frequency of communication and collaboration differ depending on

the graduate training of school psychologists, differences in mean scores were compared using an ANOVA or Welch's ANOVA. Follow-up Tukey tests were conducted for all significant group differences. The mean differences, confidence intervals around these differences, and effect sizes are reported. Data were screened for outliers and possible violations of the assumptions underlying ANOVA.

**Research question 7.** Is the frequency of communication/collaboration between school psychologists and community-based mental health professionals predicted by the percentage of students the school psychologist serves with various mental disorders?

To address this research question, responses to item 28 which asked respondents to "Please estimate the percentage of students you currently serve with a mental disorder diagnosis of: Attention Deficit Hyperactivity Disorder (ADHD); anxiety; depression; Pervasive Developmental Disorder (e.g., Autism Spectrum Disorder, Asperger's Syndrome); bipolar disorder; schizophrenia; other (please specify)" were examined. For the purpose of analysis, the reported proportions of students with mental disorders were collapsed into categories based on the types of symptoms associated with the disorder. Specifically, the mental disorders were collapsed into the following categories: 1) ADHD, 2) internalizing disorders, and 3) combination disorders. Anxiety/Depression were collapsed into the internalizing category because they involve predominantly internalizing symptoms. Pervasive Developmental Disorder, Bipolar Disorder, and Schizophrenia were collapsed into the combination category because they involve predominantly severe internalizing and externalizing symptoms. Descriptive statistics are reported. Specifically, mean, standard deviation, skewness, and kurtosis are reported. To address the communication and collaboration components of this question, frequency

data are reported for items 2 and 12, respectively. For the purpose of analysis, communication and collaboration frequencies are represented by the following values: 0=Never, 1=One to Four Times a Year, 2=Five to Nine Times a Year, 3=Once a Month, 4=Two to Three Times a Month, 5=Once a Week, 6=More than Once a Week. A multiple regression was conducted to predict the frequency of communication and collaboration from the proportion of the student population with various mental disorders served by the school psychologists. The obtained and adjusted  $R^2$  values, raw regression coefficients, standardized coefficients, and squared semipartial correlations are reported. Data were screened for outliers (i.e., box plots will be examined for outliers in descriptive data and residuals will be examined for outliers in inferential statistics) and possible violations of the assumptions underlying regression.

## **Chapter Four**

### **Results**

The results of the statistical analyses conducted to answer the research questions are presented in this chapter. Descriptive statistics are presented for research questions 1-5. Specifically, for the first and third research questions the means, standard deviations, skewness, kurtosis, ranges, and percentages are presented. For the second and fourth research questions, percentages and confidence intervals were calculated. To answer the sixth research question, ANOVAs and follow-up Tukey tests were conducted to analyze the differences in group means to determine whether frequency of communication and collaboration between school psychologists and CBMHPs differs based upon a number of demographic variables. To answer the seventh research question, a multiple regression was conducted to analyze the extent to which the frequency of communication and collaboration between school psychologists and CBMHPs is predicted by the percentage of students the school psychologist serves with various mental disorders.

#### **Data Screening**

Ninety surveys were returned out of a possible 270, yielding a 33% return rate. Ten surveys were excluded from data analysis because the respondents indicated that they do not currently work in schools (e.g., retired, district administrator, etc.). The final dataset yielded a useable total sample of 80 surveys. Every tenth survey entered was

reviewed for errors. One data entry error was detected therefore the surveys immediately before and after were also checked. Approximately 14% of the data were reviewed for accuracy at completion of this process.

### **Research Question 1**

*What is the frequency of communication and collaboration between school psychologists and CBMHPs on behalf of children with mental health problems?* For the purpose of this study, communication was defined as ‘a one-time, unidirectional sharing of information on behalf of students’ and collaboration was defined as ‘the ongoing, bi-directional sharing of information by two or more people who are working together in planning and problem-solving to promote positive outcomes for a student or students’. These definitions were provided to the respondents on the first page of the survey. To address the communication component of this research question, the frequencies of the responses to item 2 which asks “During the 2010-2011 school year, how often have you communicated with CBMHPs on behalf of students?” were examined. To address the collaboration frequency component of this research question, the frequencies of responses to item 12 which asks “During the 2010-2011 school year, how often have you collaborated with CBMHPs on behalf of students?” were examined. To calculate the mean for the communication and collaboration variables, frequencies are represented by the following values: 0=Never, 1=One to Four Times a Year, 2=Five to Nine Times a Year, 3=Once a Month, 4=Two to Three Times a Month, 5=Once a Week, 6=More than Once a Week.

Of the 80 returned surveys, only one survey was missing data related to communication frequency and another survey was missing data related to collaboration frequency. Data screening identified that 1 of the 79 respondents in this sample marked the box indicating that they have not communicated with CBMHPs but also marked the

boxes indicating that they have communicated with psychologists, counselors, etc. This respondent also completed the remaining questions in the communication section indicating that they communicated with CBMHPs for various purposes. This discrepant data was considered a clerical error and this participant’s endorsement of “I have not communicated” was omitted.

Descriptive statistics of communication and collaboration frequencies is provided in Table 2. The distribution of communication frequency scores has a positive skew ( $sk=1.39$ ) and is leptokurtotic ( $ku=2.56$ ). The scores ranged from 0 to 6 with a mean of 1.75 and a standard deviation of 1.21. The distribution of collaboration frequency scores also has a positive skew ( $sk=1.80$ ) and is leptokurtotic ( $ku=5.04$ ). The scores ranged from 0 to 6 with a mean of 1.03 and a standard deviation of 1.10.

Table 2  
*Descriptive Statistics of Communication and Collaboration Frequencies*

	<i>N</i>	<i>M</i> & 95% <i>C.I.</i>	<i>SD</i>	<i>Sk</i>	<i>Ku</i>	<i>Range</i>
Communication	79	1.75 1.47-2.02	1.21	1.39	2.56	0-6
Collaboration	79	1.03 0.78-1.27	1.10	1.80	5.04	0-6

*Note.* The scale of the communication and collaboration frequency score is as follows: 0=Never, 1=One to Four Times a Year, 2=Five to Nine Times a Year, 3=Once a Month, 4=Two to Three Times a Month, 5=Once a Week, 6=More than Once a Week.

The percentage of respondents who selected each communication and collaboration frequency response category as well as confidence intervals around these percentages are presented in Table 3. These data indicate that ninety-two percent (92.4%) of school psychologists communicated and sixty-six percent (65.8%) of school psychologists collaborated with CBMHPs at least once (i.e., endorsed either one to four times a year, five to nine times a year, once a month, two to three times a month, once a week, or more



than once a week) during the 2010-2011 school year. Additionally, one to four times during the 2010-2011 school year was the most frequently endorsed communication and collaboration response category (i.e., 43.0% of school psychologists reported communicating and collaborating with CBMHPs between one and four times a year).

**Table 3**  
*Percentages and 95% Confidence Intervals of Communication and Collaboration Frequencies*

	Never	One to four times a year	Five to nine times a year	Once a month	Two to three times a month	Once a week	More than once a week
Communication	7.6 1.8-13.4	43.0 32.1-54.0	31.7 21.4-41.9	7.6 1.8-13.4	7.6 1.6-13.4	0.0*	2.5 0.0-6.0
Collaboration	34.2 23.7-44.6	43.0 32.1-54.0	15.2 7.3-23.1	3.8 0.0-8.0	2.5 0.0-6.0	0.0*	1.3 0.0-3.7

*Note.* \* Confidence Intervals were not computed when the sample percentage was zero.

## **Research Question 2**

*With which type of community-based mental health professionals are school psychologists communicating and collaborating?* To address the communication component of this research question, responses to item 1, which asks “During the 2010-2011 school year, with which community-based mental health professionals have you communicated on behalf of students with mental health problems?” were examined. To address the collaboration component of this research question, responses to item 11 which asks “During the 2010-2011 school year, with which CBMHPs have you collaborated on behalf of students with mental health problems?” were examined. Response choices included psychiatrists or pediatric psychiatrists, pediatricians, neurologists or pediatric neurologists, psychologists, social workers, counselors/therapists, case managers. Respondents also could write in another type of CBMHP.

The percentage of respondents who reported communicating and collaborating with each type of CBMHP as well as confidence intervals around these percentages are presented in Table 4. Simply put, school psychologists communicate with CBMHPs much more frequently than they collaborate. Although these data indicate school psychologists communicate and collaborate with different types of CBMHPs, they most commonly communicate and collaborate with community-based counselors and therapists (i.e., 73% of school psychologists communicate and 38% collaborate with community-based counselors and therapists). Additionally, school psychologists communicate and collaborate with neurologists the least (i.e., 25% of school psychologists communicate and 6% collaborate with neurologists).

**Table 4**  
*Percentage of School Psychologists Communicating and Collaborating with Various CBMHPs*

Types of CBMHPs	Communication Percentages & 95% C.I.	Collaboration Percentages & 95% C.I.
Psychiatrists/Pediatric	39.2	15.2
Psychiatrists	28.5-50.0	7.3-23.1
Pediatricians	38.0	8.9
	27.3-48.7	2.6-15.3
Neurologists/Pediatric	25.3	6.3
Neurologists	15.7-34.9	1.0-11.7
Psychologists	38.0	25.3
	27.3-48.7	15.7-34.9
Social Workers	26.6	20.3
	16.8-36.3	11.4-29.1
Counselor/Therapists	73.4	38.0
	63.7-83.2	27.3-48.7
Case Managers	50.6	31.7
	39.6-61.7	21.4-42.0
Others	6.4	5.2
	1.0-11.9	0.2-10.2

### **Research Question 3**

*What is the nature and purpose of communication and collaboration between school psychologists and community-based mental health professionals? To address the*

communication component of this research question, responses to items 3-7 which ask “During the 2010-2011 school year, how often have you communicated with CBMHPs to provide information about a student, to obtain information about a student, to inform the development of interventions, to plan for progress monitoring, and to make a referral for community-based treatment?” were examined. A summary of descriptive statistics of communication frequencies for various purposes is provided in Table 5. To calculate the mean for the communication and collaboration variables, frequencies are represented by the following values: 0=Never, 1=One to Four Times a Year, 2=Five to Nine Times a Year, 3=Once a Month, 4=Two to Three Times a Month, 5=Once a Week, 6=More than Once a Week.

Table 5  
*Descriptive Statistics of Communication Frequencies for Various Purposes*

	<i>N</i>	<i>M</i> & 95% <i>C.I.</i>	<i>SD</i>	<i>Sk</i>	<i>Ku</i>	<i>Range</i>
Provide information	80	1.050 0.82-1.28	1.030	1.538	3.253	0-5
Obtain information	80	1.413 1.16-1.66	1.133	1.535	3.064	0-6
Inform the development of interventions	79	0.8101 0.60-1.02	0.948	2.521	10.881	0-6
Plan for progress monitoring	79	0.418 0.30-0.54	0.546	0.822	-0.410	0-2
Make a referral for community-based treatment	80	0.950 0.71-1.19	1.078	1.221	0.950	0-4

*Note.* The scale of the communication and collaboration frequency score is as follows: 0=Never, 1=One to Four Times a Year, 2=Five to Nine Times a Year, 3=Once a Month, 4=Two to Three Times a Month, 5=Once a Week, 6=More than Once a Week.

To address the collaboration component of this research question, responses to items 13-16 which ask “During the 2010-2011 school year, how often have you collaborated with CBMHPs to develop coordinated interventions, to progress monitor, to

evaluate interventions, and to modify interventions?” were examined. A summary of descriptive statistics of collaboration frequencies for various purposes is provided in Table 6.

Table 6  
*Descriptive Statistics of Collaboration Frequencies for Various Purposes*

	<i>N</i>	<i>M</i> & 95% C.I.	<i>SD</i>	<i>Sk</i>	<i>Ku</i>	<i>Range</i>
Develop coordinated interventions	79	0.532 0.36-0.70	0.748	1.396	1.609	0-3
Progress monitor	79	0.443 0.30-0.59	0.635	1.449	2.382	0-3
Evaluate interventions	79	0.354 0.23-0.48	0.556	1.295	0.757	0-2
Modify interventions	79	0.418 0.29-0.55	0.569	0.976	-0.019	0-2

*Note.* The scale of the communication and collaboration frequency score is as follows: 0=Never, 1=One to Four Times a Year, 2=Five to Nine Times a Year, 3=Once a Month, 4=Two to Three Times a Month, 5=Once a Week, 6=More than Once a Week.

For each purpose of communication and collaboration, the percentage of respondents who selected each communication and collaboration frequency response category as well as confidence intervals around these percentages are presented in Tables 7 and 8, respectively. These data indicate that, during the 2010-2011 school year, 55% of school psychologists communicated with CBMHPs in order to obtain information and 48% communicated to provide information between one to four times a year. Additionally, between 28% and 34% of school psychologists collaborated with CBMHPs one to four times a year in order to develop coordinated interventions, progress monitor, and evaluate or modify interventions. However, these data suggest that most school psychologists did not collaborate with CBMHPs for these purposes (i.e., 60-68% of school psychologists did not collaborate with CBMHPs in order to develop coordinated interventions, progress monitor, and evaluate or modify interventions).

Table 7  
*Percentages and 95% Confidence Intervals of Communication Frequencies for Various Purposes*

Purposes of Communication	Never	One to four times a year	Five to nine times a year	Once a month	Two to three times a month	Once a week	More than once a week
Provide Information	30.0 20.0-40.0	47.5 36.6-58.4	16.3 8.2-24.3	1.3 0.0-3.7	3.8 0.0-7.9	1.3 0.0-3.7	0.0*
Obtain information	13.8 6.2-21.3	55.0 44.1-65.9	17.5 9.2-25.8	6.3 0.9-11.6	6.3 1.0-11.5	0.0*	1.3 0.0-3.7
Inform the development of interventions	39.2 28.5-50.0	49.4 38.3-60.9	6.3 9.2-25.8	3.8 0.0-8.0	0.0*	0.0*	1.3 0.0-3.7
Plan for progress monitoring	60.8 50.0-71.5	36.7 26.0-47.3	2.5 0.0-6.0	0.0*	0.0*	0.0*	0.0*
To make a referral for community-based treatment	41.3 30.5-52.0	37.5 26.9-48.1	10.0 3.4-16.6	7.5 1.7-13.3	3.8 0.0-7.9	0.0*	0.0*

*Note.* \* Confidence Intervals were not computed when the sample percentage was zero.

Table 8  
*Percentages and 95% Confidence Intervals of Collaboration Frequencies for Various Purposes*

Purposes of Collaboration	Never	One to four times a year	Five to nine times a year	Once a month	Two to three times a month	Once a week	More than once a week
Develop coordinated interventions	59.5 48.7-70.3	30.4 2.0-40.5	7.6 1.8-13.4	2.5 0.0-6.0	0.0*	0.0*	0.0*
Progress monitor	62.0 51.3-72.7	32.9 22.6-43.2	3.8 0.0-8.0	1.3 0.0-3.7	0.0*	0.0*	0.0*
Evaluate interventions	68.4 58.1-78.6	27.9 18.0-37.8	3.8 0.0-8.0	0.0*	0.0*	0.0*	0.0*
Modify interventions	62.0 51.3-72.7	34.2 23.7-44.6	3.8 0.0-8.0	0.0*	0.0*	0.0*	0.0*

*Note.* \* Confidence Intervals were not computed when the sample percentage was zero.

#### **Research Question 4**

*What methods do school psychologists most frequently utilize to communicate with community-based mental health professionals?* To address this research question, responses to item 8, 9, and 10 which ask “In your professional experience, what have you found to be the most effective method of providing and obtaining information from CBMHPs and what is your most preferred method of communication with CBMHPs?” were examined. The response choices included phone call, written report, face-to-face discussion, note, email, text message, or video conference. Respondents also were able to write in another method of communication.

The percentage of respondents who reported their most preferred and effective methods of communicating with CBMHPs as well as confidence intervals around these percentages are presented in Table 9. These data indicate that school psychologists not only prefer to communicate with CBMHPs through phone calls (43%), written reports (20%), and face-to-face discussion (16%), but they also perceive these to be the most effective methods for providing (45%, 16%, and 15%, respectively) and obtaining (32%, 30%, and 10%, respectively) information.

Table 9  
*Percentage of School Psychologists' Perceptions of the Most Effective and Preferred Methods of Communication with CBMHPs*

	Most Effective in Providing Information Percentages & 95% C.I.	Most Effective in Obtaining Information Percentages & 95% C.I.	Most Preferred Method Percentages & 95% C.I.
Phone Call	45.0 34.1-55.9	32.5 22.2-42.8	42.5 31.7-53.3
Written Report	16.3 8.2-24.3	30.0 20.0-40.0	20.0 11.2-28.8
Face-to-face Discussion	15.0 7.2-22.8	10.0 3.4-16.6	16.3 8.2-24.3
Note	0.0*	0.0*	0.0*
E-mail	2.5 0.0-5.9	1.3 0.0-3.7	10.0 3.4-16.6
Text Message	0.0*	0.0*	0.0*
Video Conferencing	0.0*	0.0*	0.0*
Other	6.3 0.0-11.6	13.8 6.2-21.3	2.5 0.0-5.9

*Note.* \* Confidence Intervals were not computed when the sample percentage was zero.

### **Research Question 5**

*What do school psychologists perceive as the benefits and barriers of collaboration with community-based mental health professionals?* To address the perceived benefits component of this research question, responses to item 17 which asks “What are the benefits of collaboration with CBMHPs?” were examined. The response choices for the benefits component of this question include, that there are no benefits, improved student physical health outcomes, improved student mental health outcomes, avoiding duplication of services, opportunity for cross-disciplinary problem-solving, opportunity to share resources, feeling valued for the expertise you offer to other professionals, and assessing student progress across different setting. Respondents also were able to write in another benefit. To address the barriers component of this research question, responses to item 18 which asks “What are the barriers to collaboration with CBMHPs?” were examined. The response choices for the barriers component of this research question include, no barriers, not enough time, CBMHPs are not accessible,

obtaining parent permission to collaborate, differing views on child development, differing views on mental health services, it is not beneficial to the interventions or progress monitoring of students, do not know which CBMHPs to collaborate, and respondents were able to write in another barrier to communication. The percentage of respondents who reported the benefits and barriers to collaboration with CBMHPs as well as confidence intervals around these percentages are presented in Tables 10 and 11, respectively. These data indicate that most school psychologists perceive improved student mental health (85%) and academic outcomes (70%), the opportunity for cross-disciplinary problem solving (67%), and avoiding the duplication of services (56%) to be benefits of collaboration with CBMHPs and some school psychologists perceive having the opportunity to share resources (48%), feeling valued for the expertise they offer (39%), and improved student physical health outcomes (35%) to be benefits. While benefits of collaboration were widely endorsed, 1.3% of school psychologists in this sample indicated that there are no benefits. Also, most school psychologists indicated that barriers to collaboration include that CBMHPs are not accessible (57%) and there is not enough time to collaborate (54%). Additionally, collaboration not being beneficial to interventions or progress monitoring was only cited by 1.3% of the respondents as an obstacle.



Table 10  
*Percentages of School Psychologists' Perceptions of Benefits of Collaboration with CBMHPs*

	Proportions & 95% C.I.
No benefits	1.3 0.0-3.7
Improved student physical health outcomes	35.4 24.9-46.0
Improved student mental health outcomes	84.8 76.9-92.7
Improved student academic outcomes	69.6 59.4-79.8
Avoiding duplication of services	55.7 44.7-66.6
Opportunity for cross-disciplinary problem-solving	67.1 56.7-77.4
Opportunity to share resources	48.1 37.1-59.1
Feeling valued for the expertise you offer to other professionals	38.5 27.7-49.3
Assessing student progress across different settings	53.1 42.2-64.2
Other	10.3 3.5-17.0

Table 11  
*Percentages of School Psychologists' Perceptions of Barriers to Collaboration with CBMHPs*

	Proportions & 95% C.I.
No barriers	7.6 1.8-13.4
Not enough time	54.4 43.5-65.4
CBMHPs are not accessible	57.0 46.0-67.9
Obtaining parent permission to collaborate	48.1 37.1-59.1
Differing views on child development	10.1 3.5-16.8
Differing views on mental health services	22.8 13.5-32.0
It is not beneficial to the interventions or progress monitoring of students	1.3 0.0-3.8
Do not know which CBMHPs to collaborate	7.8 1.8-13.8
Other	18.4 9.7-27.1

## **Research Question 6**

*Does the frequency of communication and collaboration between school psychologists and community-based mental health professionals relate to various demographic variables?* To address this research question, participants were sorted into subgroups based on a variety of demographic and professional variables reported on items 24, 25, 27, 30, 31, and 35 in order to conduct 12 one-way ANOVAs. The distributions of communication and collaboration frequency scores, items 2 and 12, respectively, were examined separately for school psychologists within each subgroup. For the purpose of analysis, communication and collaboration frequencies are represented by the following values: 0=Never, 1=One to Four Times a Year, 2=Five to Nine Times a Year, 3=Once a Month, 4=Two to Three Times a Month, 5=Once a Week, 6=More than Once a Week.

Prior to conducting the one-way ANOVAs, the data were screened for violations of independence, equal variances, and normality. For each ANOVA conducted, the assumption of independence is supported by the fact that school psychologists completed the Communication and Collaboration (CC) survey independently. Despite the fact that each distribution deviated from normality, the ANOVAs were considered to be robust to a violation of the normality assumption based on a sufficiently large sample size. While examining for normality, the data were screened for outliers but none were identified (i.e., scores did not fall outside of the 0-6 rating scale range). All groups had unequal variances. For the graduate training, ongoing training, and years of experience groups, it was assumed that the unequal variance violations made the analyses more conservative because the larger groups tended to have larger variances (Stevens, 2007). However, for

the student socio-economic status, the community type, and the number of students served groups, the larger groups had the smaller variances and the smaller groups had the larger variances, making the ANOVA somewhat liberal. Therefore, for these analyses, the Welch version of the ANOVA was conducted to guard against a violation of the equal variances assumption. The following section summarizes the findings from these analyses.

**Question 6a.** *Does the frequency of communication and collaboration between school psychologists and community-based mental health professionals relate to the graduate training of the school psychologist?* To address this research question, participants were sorted into subgroups based on highest degree earned (e.g., Masters, Specialist, and Doctorate) reported on item 24. The distributions of communication and collaboration frequency scores were examined separately for school psychologists with (1) a Masters, (2) an Educational Specialist Degree, and (3) with a doctoral degree. A summary of descriptive statistics for each group is provided in Tables 12 and 13. An Educational Specialist Degree, or its equivalent, was the highest degree earned by most respondents. Specifically, an Educational Specialist Degree was the highest degree earned by approximately 75% of respondents, a Doctoral Degree was the highest degree earned by approximately 14% of respondents, and a Masters Degree was the highest degree earned by approximately 11% of respondents.

Table 12

*Descriptive Statistics of Communication Frequencies by Degree Earned*

Degree	<i>N</i>	<i>M</i> 95% C.I.	<i>SD</i>	<i>Sk</i>	<i>Ku</i>	<i>Range</i>
Masters Degree	9	1.667 0.807-2.526	1.118	1.533	1.257	1-4
Educational Specialist Degree	59	1.746 1.423-2.069	1.240	1.459	3.347	0-6
Doctoral Degree	11	1.818 0.978-2.658	1.250	1.162	-0.387	1-4

*Note.* The scale of the communication and collaboration frequency score is as follows: 0=Never, 1=One to Four Times a Year, 2=Five to Nine Times a Year, 3=Once a Month, 4=Two to Three Times a Month, 5=Once a Week, 6=More than Once a Week.

Table 13

*Descriptive Statistics of Collaboration Frequencies by Degree Earned*

Degree	<i>N</i>	<i>M</i> 95% C.I.	<i>SD</i>	<i>Sk</i>	<i>Ku</i>	<i>Range</i>
Masters Degree	9	1.000 0.456-1.543	0.707	0	-0.286	0-2
Educational Specialist Degree	60	1.050 0.740-1.360	1.199	1.792	4.358	0-6
Doctoral Degree	10	0.900 0.372-1.428	0.738	0.166	-0.734	0-2

*Note.* The scale of the communication and collaboration frequency score is as follows: 0=Never, 1=One to Four Times a Year, 2=Five to Nine Times a Year, 3=Once a Month, 4=Two to Three Times a Month, 5=Once a Week, 6=More than Once a Week.

**Question 6b.** *Does the frequency of communication and collaboration between school psychologists and community-based mental health professionals relate to the ongoing training of the school psychologist?* To address this research question, participants were sorted into subgroups based on the number of hours of professional development (i.e., 0 hours, 1-10 hours, more than 10 hours) received in the 2010-2011 school year related to mental health problems of children and adolescents, reported on item 30. The distributions of communication and collaboration frequency scores were examined separately for school psychologists who (1) did not receive professional development on this topic, (2) those who received between 1 and 10 hours, and (3) those who received more than 10 hours during the 2010-2011 school year. A summary of descriptive statistics for each group is provided in Tables 14 and 15. Most respondents

(58.2%) indicated that they received between one and ten hours of professional development related to mental health problems of children and adolescents during the 2010-2011 school year and 27.8% of respondents indicated that they received more than ten hours. However, 13.9% of respondents reported that they did not receive any professional development related to mental health problems of children and adolescents during the 2010-2011 school year.

Table 14  
*Descriptive Statistics of Communication Frequencies by Hours of Professional Development*

	<i>N</i>	<i>M &amp; 95% C.I.</i>	<i>SD</i>	<i>Sk</i>	<i>Ku</i>	<i>Range</i>
None	11	1.182 0.6-1.8	0.874	0.690	0.779	0-3
One-ten hours	46	1.609 1.30-1.92	1.043	0.864	0.480	0-4
More than 10 hours	22	2.318 1.66-2.98	1.492	1.476	1.697	1-6

*Note.* The scale of the communication and collaboration frequency score is as follows: 0=Never, 1=One to Four Times a Year, 2=Five to Nine Times a Year, 3=Once a Month, 4=Two to Three Times a Month, 5=Once a Week, 6=More than Once a Week.

Table 15  
*Descriptive Statistics of Collaboration Frequencies by Hours of Professional Development*

	<i>N</i>	<i>M &amp; 95% C.I.</i>	<i>SD</i>	<i>Sk</i>	<i>Ku</i>	<i>Range</i>
None	11	0.818 0.41-1.22	0.603	0.028	0.413	0-2
One-ten hours	46	0.913 0.61-1.21	1.007	0.999	0.619	0-4
More than 10 hours	22	1.364 0.74-1.98	1.400	2.146	5.328	0-6

*Note.* The scale of the communication and collaboration frequency score is as follows: 0=Never, 1=One to Four Times a Year, 2=Five to Nine Times a Year, 3=Once a Month, 4=Two to Three Times a Month, 5=Once a Week, 6=More than Once a Week.

**Question 6c.** *Does the frequency of communication and collaboration between school psychologists and community-based mental health professionals relate to the years of experience of the school psychologist?* To address this research question, participants were sorted into subgroups based on the number of years (i.e., 1-5 years, 6-

10 years, more than 10 years) of post-degree experience in school psychology, reported on item 25. The distributions of communication and collaboration frequency scores were examined separately for school psychologists who (1) had between 1 and 5 years experience, (2) those who had between 6 and 10 years experience, and (3) those that had more than 10 years experience. A summary of descriptive statistics for each group is provided in Tables 16 and 17. Most respondents (64.6%) indicated that they have more than 10 years experience working as a school psychologist and 19.0% of respondents reported having between six and ten years of experience. Fewest respondents (16.5%) reported having between one and five years of experience as a practicing school psychologist.

Table 16  
*Descriptive Statistics of Communication Frequencies by Years Experience in School Psychology*

	<i>N</i>	<i>M &amp; 95% C. I.</i>	<i>SD</i>	<i>Sk</i>	<i>Ku</i>	<i>Range</i>
One to five years	13	1.692 1.12-2.26	0.947	0.037	-0.818	0-3
Six to ten years	15	1.133 0.67-1.60	0.834	0.579	0.502	0-3
More than ten years	51	1.941 1.57-2.31	1.318	1.422	2.031	0-6

*Note.* The scale of the communication and collaboration frequency score is as follows: 0=Never, 1=One to Four Times a Year, 2=Five to Nine Times a Year, 3=Once a Month, 4=Two to Three Times a Month, 5=Once a Week, 6=More than Once a Week.

Table 17  
*Descriptive Statistics of Collaboration Frequencies by Years Experience in School Psychology*

	<i>N</i>	<i>M &amp; 95% C.I.</i>	<i>SD</i>	<i>Sk</i>	<i>Ku</i>	<i>Range</i>
One to five years	13	0.923 0.40-1.44	0.862	1.085	1.772	0-3
Six to ten years	15	0.800 0.28-1.32	0.941	1.044	0.500	0-3
More than ten years	51	1.118 0.78-1.45	1.194	1.892	5.122	0-6

*Note.* The scale of the communication and collaboration frequency score is as follows: 0=Never, 1=One to Four Times a Year, 2=Five to Nine Times a Year, 3=Once a Month, 4=Two to Three Times a Month, 5=Once a Week, 6=More than Once a Week.

**Question 6d.** *Does the frequency of communication and collaboration between school psychologists and community-based mental health professionals relate to the socio-economic status of the student population served by the school psychologist?* To address this research question, participants were sorted into subgroups based on the socio-economic status of the students they serve (i.e., whether they serve all Title 1 schools or not all Title 1 schools) which were reported on item 35. In addition to the two surveys missing data related to the communication and collaboration frequency, four surveys were missing data related to Title 1 status. The distributions of communication and collaboration frequency scores were examined separately for school psychologists who (1) serve all Title 1 schools or (2) those who do not serve all Title 1 schools. A summary of descriptive statistics for each group is provided in Tables 18 and 19. Approximately, 57% of respondents serve at all Title 1 schools and 43% of respondents serve some schools that are not Title 1 schools.

Table 18  
*Descriptive Statistics of Communication Frequencies by SES of Student Population*

	<i>N</i>	<i>M &amp; 95% C.I.</i>	<i>SD</i>	<i>Sk</i>	<i>Ku</i>	<i>Range</i>
All Title 1 schools	43	1.605 1.24-1.97	1.178	1.478	3.711	0-6
Not all Title 1 schools	32	1.938 1.49-2.39	1.243	1.416	2.508	0-6

*Note.* The scale of the communication and collaboration frequency score is as follows: 0=Never, 1=One to Four Times a Year, 2=Five to Nine Times a Year, 3=Once a Month, 4=Two to Three Times a Month, 5=Once a Week, 6=More than Once a Week.

Table 19  
*Descriptive Statistics of Collaboration Frequencies by SES of Student Population*

	<i>N</i>	<i>M &amp; 95% C.I.</i>	<i>SD</i>	<i>Sk</i>	<i>Ku</i>	<i>Range</i>
All Title 1 schools	43	0.907 0.62-1.19	0.921	1.150	1.794	0-4
Not all Title 1 schools	32	1.250 0.78-1.72	1.300	1.972	5.117	0-6

*Note.* The scale of the communication and collaboration frequency score is as follows: 0=Never, 1=One to Four Times a Year, 2=Five to Nine Times a Year, 3=Once a Month, 4=Two to Three Times a Month, 5=Once a Week, 6=More than Once a Week.

**Question 6e.** *Does the frequency of communication and collaboration between school psychologists and community-based mental health professionals relate to the type of community where the majority of the students served by the school psychologist reside?* To address this research question, participants were sorted into subgroups based on the type of community where the majority of their students reside (i.e., urban, suburban, rural) which will be reported on item 31. The distributions of communication and collaboration frequency scores were examined separately for school psychologists who (1) serve the majority of students from urban communities, (2) suburban communities, and (3) rural communities. A summary of descriptive statistics for each group is provided in Tables 20 and 21. Most respondents (~50%) serve students who reside in suburban communities while approximately 29% serve students who reside in urban communities and 20% serve students who reside in rural communities.

Table 20  
*Descriptive Statistics of Communication Frequencies by Community Type*

	<i>N</i>	<i>M &amp; 95% C.I.</i>	<i>SD</i>	<i>Sk</i>	<i>Ku</i>	<i>Range</i>
Urban	23	1.652 1.02-2.29	1.465	1.429	2.417	0-6
Suburban	40	1.875 1.53-2.22	1.067	1.862	4.763	1-6
Rural	16	1.563 0.92-2.21	1.210	0.997	0.366	0-4

*Note.* The scale of the communication and collaboration frequency score is as follows: 0=Never, 1=One to Four Times a Year, 2=Five to Nine Times a Year, 3=Once a Month, 4=Two to Three Times a Month, 5=Once a Week, 6=More than Once a Week.



Table 21

*Descriptive Statistics of Collaboration Frequencies by Community Type*

	<i>N</i>	<i>M</i> 95% <i>C.I.</i>	<i>SD</i>	<i>Sk</i>	<i>Ku</i>	<i>Range</i>
Urban	22	1.163 0.50-1.77	1.424	2.349	6.378	0-6
Suburban	41	1.049 0.75-1.35	0.947	1.012	1.272	0-4
Rural	16	0.813 0.29-1.34	0.981	0.906	-0.229	0-3

*Note.* The scale of the communication and collaboration frequency score is as follows: 0=Never, 1=One to Four Times a Year, 2=Five to Nine Times a Year, 3=Once a Month, 4=Two to Three Times a Month, 5=Once a Week, 6=More than Once a Week.

**Question 6f.** *Does the frequency of communication and collaboration between school psychologists and community-based mental health professionals relate to the number of students served by the school psychologist?* To address this research question, participants were sorted into subgroups based on number of students served by the school psychologist (e.g., <500, 500-999, 1000 or more) reported on item 27. The distributions of communication and collaboration frequency scores were examined separately for school psychologists who (1) serve less than 500 students, (2) serve between 500 and 999 students, and (3) those who serve more than 1,000 students. A summary of descriptive statistics for each group is provided in Tables 22 and 23. Most respondents (~80%) serve more than 1,000 students while 12% serve between 500 and 999 students and approximately 8% serve fewer than 500 students.

Table 22

*Descriptive Statistics of Communication Frequencies by Number of Students Served*

	<i>N</i>	<i>M</i> & 95% <i>C.I.</i>	<i>SD</i>	<i>Sk</i>	<i>Ku</i>	<i>Range</i>
Less than 500 students	7	1.857 0.05-3.66	1.952	1.971	4.507	0-6
Between 500 and 999 students	10	2.6 1.42-3.78	1.647	0.993	0.453	1-6
More than 1,000 students	62	1.597 1.35-1.85	0.983	0.791	0.519	0-4

*Note.* The scale of the communication and collaboration frequency score is as follows: 0=Never, 1=One to Four Times a Year, 2=Five to Nine Times a Year, 3=Once a Month, 4=Two to Three Times a Month, 5=Once a Week, 6=More than Once a Week.

Table 23

*Descriptive Statistics of Collaboration Frequencies by Number of Students Served*

	<i>N</i>	<i>M &amp; 95% C.I.</i>	<i>SD</i>	<i>Sk</i>	<i>Ku</i>	<i>Range</i>
Less than 500 students	6	1.667 -0.70-4.03	2.250	1.882	3.797	0-6
Between 500 and 999 students	10	1.500 0.73-2.27	1.080	1.323	2.816	0-4
More than 1,000 students	63	0.889 0.66-1.12	0.918	1.131	1.369	0-4

*Note.* The scale of the communication and collaboration frequency score is as follows: 0=Never, 1=One to Four Times a Year, 2=Five to Nine Times a Year, 3=Once a Month, 4=Two to Three Times a Month, 5=Once a Week, 6=More than Once a Week.

**Analysis of variance.** In order to determine if the frequency of communication and collaboration with CBMHPs differs reliably depending on differences in demographic and professional variables, differences in mean scores between groups were compared by conducting 6 one-way ANOVAs (i.e., research questions 6a-6c) and 6 Welch versions of the ANOVA (i.e., research questions 6d-6f). A summary of each of the ANOVA results is presented in Table 24 and 25. Of the 12 analyses, significant results were only obtained in one: there was a significant difference in communication frequency depending on the number of hours of professional development related to mental health in youth that school psychologists received in the 2010-2011 school year. In other words, the highest degree earned by the school psychologist, the years of experience of the school psychologist, the socio-economic status of the students served by the school psychologist, the number of students served by the school psychologist, and the type of community in which most students resided did not seem to have a significant effect on school psychologist’s frequency of communication and collaboration with CBMHPs. Of note, there were not any significant differences in collaboration frequencies related to the demographic and professional variables examined.

Table 24  
ANOVA Summary Table for Frequency of Communication by School Psychologist  
Variables

Variable	<i>N</i>	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Highest Degree Earned	78	2	0.11	0.06	0.04	0.96
Error		76				
Hours of Professional Development	78	2	11.57	5.79	4.25	0.02*
Error		76				
Years of Experience	78	2	7.61	3.81	2.69	0.07
Error		76				
Socio-economic status of students served**	74	1	-	-	1.38	0.25
Error		65				
Community type of students served**	78	2	-	-	0.49	0.61
Error		35				
Number of students served**	78	2	-	-	1.68	0.23
Error		10				

\**p*<.05

Note. \*\* Welch version of ANOVA conducted

Table 25  
ANOVA Summary Table for Frequency of Collaboration by School Psychologist  
Variables

Variable	<i>N</i>	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Highest Degree Earned	78	2	0.20	0.10	0.08	0.92
Error		76				
Hours of Professional Development	78	2	3.57	1.78	1.50	0.23
Error		76				
Years of Experience	78	2	7.46	3.73	0.41	0.66
Error		76				
Socio-economic status of students served**	74	1	-	-	1.63	0.21
Error		53				
Community type of students served**	78	2	-	-	0.44	0.65
Error		34				
Number of students served**	78	2	-	-	1.62	0.25
Error		9				

\**p*<.05

Note. \*\* Welch version of ANOVA conducted

Follow-up tests were conducted only with the ANOVA involving the frequency of communication as it relates to the number of hours of professional development because this was the only analyses that detected a significant overall effect.

**Follow-up tests for professional development.** Cohen's  $\eta^2$  was calculated to be .10, which indicates a small effect of communication frequencies based on number of hours of professional development (Cohen, 1992). The results of the one-way ANOVA [F( 2, 76)= 4.25, *p*=0.018] suggest rejection of the null hypothesis and indicate that at least one

pair of population group means differ. A follow-up Tukey test of all pairwise comparisons was conducted. The mean differences and confidence intervals around these differences are provided in Table 26. Examination of Table 26 shows that school psychologists who received more than 10 hours of professional development on the topic of youth mental health during the 2010-2011 school year communicated significantly more frequently with CBMHPs than those who did not receive any professional development on this topic. Specifically, the mean communication frequency score of school psychologists who received more than 10 hours of professional development was 1.136 points higher than that of school psychologists who did not received any professional development on this topic.

Table 26  
*Pairwise Hours of Professional Development Comparisons of Communication Frequency Scores*

<i>Comparison</i>	<i>Mean Difference</i>	<i>95% Tukey CI</i>
One to ten hours-none	0.427	0.509-1.363
More than 10 hours - none	1.136*	0.107-2.166
More than 10 hours - one to ten hours	0.710	-0.013-1.432

\*p<.05

### **Research Question 7**

*Is the frequency of communication and collaboration between school psychologists and community-based mental health professionals predicted by the percentage of students the school psychologist serves with various mental disorders? To address this research question, responses to item 28 which asked respondents to “Please estimate the percentage of students you currently serve with a mental disorder diagnosis of: Attention Deficit Hyperactivity Disorder (ADHD); anxiety; depression; Pervasive Developmental Disorder (e.g., Autism Spectrum Disorder, Asperger’s Syndrome); bipolar disorder; schizophrenia; other (please specify)” were examined.*

Data screening identified that 30 of the 80 respondents in this sample left one or more of the response lines blank for the percentage of students with each disorder. In order to use these data, 0 was imputed in response lines that were left blank. Also, 10 respondents did not report an exact percentage of students for each category; rather, 6 participants indicated that they serve <1% or <.5% and 4 participants reported that the percentage of students they serve with each condition falls within a range. In these instances, the mean of the range was imputed and <1% was considered a range from 0-1%, and .5% was imputed. In light of this, these findings should be interpreted with caution.

Descriptive statistics are presented in Table 27. The percentage of students with each disorder approximates estimates of the prevalence of each disorder in the pediatric population.

Table 27  
*Descriptive Statistics of the Percentage of Students Served with a Diagnosed Mental Disorder*

	<i>N</i>	<i>M</i>	<i>SD</i>	<i>Sk</i>	<i>Ku</i>	<i>Range</i>
Attention Deficit Hyperactivity Disorder	80	18.356	17.464	1.520	2.268	0-80
Anxiety	80	6.594	11.261	3.384	14.424	0-70
Depression	80	5.625	9.198	3.909	21.578	0-65
Pervasive Developmental Disorder	80	9.344	13.596	3.311	15.590	0-90
Bipolar Disorder	80	3.581	5.286	2.224	4.998	0-25
Schizophrenia	80	0.632	1.938	5.737	39.247	0-15
Other	80	2.619	10.281	8.223	42.046	0-80

For the purpose of analysis, the reported proportions of students with mental disorders were collapsed into categories based on the types of symptoms associated with the disorder. Specifically, the mental disorders were collapsed into the following categories: 1) ADHD, 2) internalizing disorders, and 3) combination disorders.

Anxiety/Depression were collapsed into the internalizing category because they involve predominantly internalizing symptoms. Pervasive Developmental Disorder, Bipolar Disorder, and Schizophrenia were collapsed into the combination category because they involve predominantly severe internalizing and externalizing symptoms. An examination of the “other” category indicated that very few school psychologists worked with students with other diagnosed mental disorders and there was not a pattern in these responses so the other category was not included in this analysis. The various disorders that respondents wrote in the “other” category included “learning, emotional (2), behavioral (2), and neurological disorders, impulse control disorders, intermittent explosive disorder, adjustment disorder, oppositional defiant disorder, developmental delay (2-5 yrs), selective mutism, sexual identity issues, conduct disorder (2), and obsessive compulsive disorder”. Additionally, one respondent indicated that they serve a percentage of students with “other” mental health disorder(s) but did not write in the name of the disorder(s) in the requested space. The distribution of each variable (i.e. ADHD, internalizing disorders, and combination disorders) involved in the analyses was examined.

Aggregated descriptive statistics are displayed in Table 28.

Table 28  
*Aggregated Descriptive Statistics of the Percentage of Students Served with a Diagnosed Mental Disorder*

	<i>N</i>	<i>M</i>	<i>SD</i>	<i>Sk</i>	<i>Ku</i>	<i>Range</i>
ADHD	80	18.356	17.464	1.520	2.268	0-80
Internalizing	80	12.219	19.900	3.700	18.456	0-135
Combination	80	13.557	18.165	3.695	20.668	0-130

To address the communication and collaboration components of this question, frequency data were examined on items 2 and 12, respectively. Correlations between predictor variables are presented in Table 29. These data do not suggest collinearity.

Table 29  
*Correlations between ADHD, Internalizing Disorders, Combination Disorders, Communication Frequency, and Collaboration Frequency*

	ADHD	Internalizing	Combination	Communication Frequency	Collaboration Frequency
ADHD	1.000	-	-	-	-
Internalizing	0.502*	1.000	-	-	-
Combination	0.732*	0.693*	1.000	-	-
Communication Frequency	0.039	0.232*	0.168	1.000	-
Collaboration Frequency	0.125	0.128	0.192	0.677*	1.000

\* $p < .05$

**Communication.** A multiple regression analysis was then conducted predicting communication frequency scores from the percentage of students school psychologists serve with ADHD, internalizing disorders, and combination disorders. The obtained  $R^2$  value was 0.070 suggesting about 7% of the variance in communication frequency scores was accountable by the set of predictors. This was not statistically significant  $F(3,75)=1.89, p=.14$ . The adjusted  $R^2$  value was 0.033. The root mean square error was 1.194, which indicates that predictions of communication frequencies tend to be off by about 1.194. The regression data are presented in Table 30.

Table 30  
*Communication Regression Data*

	Parameter estimate	Standard error	<i>t</i> -values	<i>p</i> -values	<i>b</i> - values (standardized estimate)	Uniqueness values (squared semipartial)
Intercept	1.681	0.195	8.61	<.0001	-	-
% ADHD	-0.013	0.012	-1.15	0.2548	-0.193	0.016
% Internalizing	0.013	0.009	1.41	0.1624	0.218	0.247
% Combined	0.011	0.013	0.80	0.4237	0.161	0.008

Note.  $R^2$  is not significant.

The residuals were screened for outliers and possible violations of the assumptions underlying regression. Outliers were screened for using studentized residuals and Cook's D. The most extreme studentized residual was 3.65. The Cook's D

value was .367, which suggests that it did not have an undo influence on the regression analysis. An examination of a scatterplot of the residuals with the predicted values revealed no violations of the linearity or homoscedasticity assumptions, and the distribution of the residuals was found to be positively skewed ( $sk=1.514$ ,  $ku=3.054$ ) due at least partially to the observation with the studentized residual of 3.65. Given the sample size it is expected that the regression will be robust to this violation of normality.

**Collaboration.** A multiple regression analysis was also conducted predicting collaboration frequency scores from the percentage of students school psychologists serve with ADHD, internalizing disorders, and combination disorders. The obtained  $R^2$  value was 0.038 suggesting about 3.8% of the variance in collaboration frequency scores was accountable by the set of predictors. This was not statistically significant  $F(3, 75)=.98$ ,  $p=.41$ . The adjusted  $R^2$  value was -0.001. The root mean square error was 1.098, which indicated that predictions of collaboration frequencies tended to be off by about 1.098. The regression data are presented in Table 31.

Table 31  
*Collaboration Regression Data*

	Parameter estimates	Standard error	t-values	p-values	B-values (standardized estimate)	Uniqueness values (squared semipartial)
Intercept	0.887	0.181	4.90	<.0001	-	-
% ADHD	-0.002	0.010	-0.20	0.8412	-0.033	0.0005
% Internalizing	-0.001	0.009	-0.07	0.9462	-0.011	0.0001
% Combined	0.013	0.012	1.12	0.2645	0.224	0.0162

*Note.*  $R^2$  is not significant.

The residuals were screened for outliers and possible violations of the assumptions underlying regression. Outliers were screened for using studentized residuals and Cook's D. The most extreme studentized residual was 4.53 and the most extreme Cook's D value was .553 which suggests that it did not have undo influence on the regression analysis. An examination of a scatterplot of the residuals with the



predicted values revealed no violations of the linearity or homoscedasticity assumptions, and the distribution of the residuals was found to be positively skewed ( $sk=1.754$ ,  $ku=4.744$ ) due at least in part to the observation with the studentized residual of 4.53. Given the sample size it is expected that the regression will be robust to this violation of normality.

### **Summary**

Findings of this study indicate that almost all school psychologists communicated and approximately two thirds of school psychologists collaborated with CBMHPs at least once during the 2010-2011 school year. Although school psychologists most commonly communicate and collaborate with community-based counselors and therapists, they communicate and collaborate with neurologists the least. School psychologists cited obtaining and providing information as the most common purposes for communicating with CBMHPs. Despite some school psychologists reporting that they collaborate with CBMHPs for the purposes of developing coordinated interventions, progress monitoring, and evaluating and modifying interventions, most do not collaborate for these purposes. Also, findings indicate that school psychologists prefer to communicate with CBMHPs through phone calls, written reports, and face-to-face discussion; they also perceive these methods of communication to be most effective.

Findings from this study indicate that school psychologists perceive a number of benefits and barriers to collaboration with CBMHPs. Specifically, improved student mental health and academic outcomes, the opportunity for cross-disciplinary problem solving, and avoiding the duplication of services were benefits endorsed most frequently. Also, having the opportunity to share resources, feeling valued for the expertise they

offer, and improved student physical health outcomes are benefits that were also endorsed by some school psychologists. Although benefits of collaboration were widely endorsed, a small minority of respondents indicated that there are no benefits. Most school psychologists indicated that barriers to collaboration include that CBMHPs are not accessible and there is not enough time to collaborate.

For group differences in communication and collaboration frequency scores, only one significant result was obtained. There was a significant difference in communication frequency depending on the number of hours of professional development related to mental health in youth that school psychologists received in the 2010-2011 school year. Specifically, school psychologists who received more than 10 hours of professional development on the topic of youth mental health during the 2010-2011 school year communicated significantly more frequently with CBMHPs than those who did not receive any professional development on this topic. No significant group differences were found for the highest degree earned by the school psychologist, the years of experience of the school psychologist, the socio-economic status of the students served by the school psychologist, the number of students served by the school psychologist, and the type of community in which most students resided on communication or collaboration frequencies. Significant results were not obtained for predicting communication and collaboration frequency by the percentage of students with mental disorders.

## **Chapter Five**

### **Discussion**

This study explored the communication and collaboration practices of school psychologists with CBMHPs on behalf of students with mental illness. Specifically, this study obtained data regarding the purposes and methods for communicating with CBMHPs, school psychologists' perceptions of the benefits and barriers to collaboration, the frequency of communication and collaboration between school psychologists and CBMHPs, how these frequencies relate to specific demographic variables, and whether they are predicted by the percentage of students served with mental illness. This chapter interprets and discusses the results of the current study. First, the findings from each research question will be summarized and discussed and then a discussion of strategies to promote collaboration, limitations, and future directions will follow.

#### **Research Questions 1 & 3: Frequency and Purpose of Communication and Collaboration**

Findings from this study indicate that communication with CBMHPs occurs more frequently and by more school psychologists than collaboration. Despite findings from this study indicating that almost all school psychologists communicated and approximately two thirds of school psychologists collaborated with CBMHPs at least once during the 2010-2011 school year, rates of communication and collaboration are very low considering the substantial numbers of students that school psychologists serve

(i.e., ~80% of school psychologists reported serving more than 1,000 students during the 2010-2011 school year). While it is promising that most school psychologists communicated and some school psychologists collaborated with CBMHPs, it is not surprising that communication and collaboration tended to occur only between one and four times a year and that some school psychologists did not communicate or collaborate with CBMHPs at all during the 2010-2011 school year. In fact, approximately 8% did not communicate and approximately 34% did not collaborate. With respect to the specific purposes of collaboration with CBMHPs, the findings indicate that during the 2010-2011 school year, approximately one third of school psychologists collaborated with CBMHPs (between one and four times a year) for the purpose of developing coordinated interventions, progress monitoring, and evaluating or modifying interventions. These findings are consistent with the interdisciplinary collaboration literature indicating that although there are many benefits of collaboration, it occurs infrequently given the considerable number of students each school psychologist typically serves (Shaw & Woo, 2008).

There are several possible reasons for the low frequency of communication and collaboration reported in this study. The low rates of communication and collaboration may be due to the lack of ongoing training received by school psychologists on the topic of youth mental health. This explanation is supported by the significantly higher rates of communication of school psychologists who received more than 10 hours of professional development on this topic compared to those who received no professional development. This finding is consistent with extant literature indicating that the lack of proper training is a barrier to collaborative practices (Carlson, 2008).

Another potential explanation for the low rates of communication and collaboration between school psychologists and CBMHPs may be that these rates vary based on the school psychologist's perceptions of the benefits of collaboration. Specifically, it is hypothesized that school psychologists who perceive greater benefits of collaboration engage in more frequent communication and collaboration with CBMHPs than those who perceive fewer benefits. This hypothesis is indirectly supported by research in social psychology suggesting that when social norms are activated (e.g., an individual's perception about the benefits of collaboration) favorable conduct may result (e.g., collaboration; Cialdini, 2003). However, future research is needed to explore the specific relationship between school psychologists' perceived benefits and the rates of collaboration. Additionally, further research is needed to explore whether school psychologists' perceptions of the benefits of communication and collaboration with CBMHPs serve as moderators between the barriers to communication and collaboration and the frequency with which they occur.

Another hypothesis for the low rates of communication and collaboration is that schools may not have established procedures for communicating or collaborating with CBMHPs. This explanation is similar to other findings indicating that professionals working in organizations with an established record of collaboration were more likely to report the occurrence of collaborative practices than those with weaker records of collaboration (Drabble, 2007). Future research is warranted to determine if the frequency of communication and collaboration with CBMHPs differs reliably depending on whether schools have established procedures for contacting CBMHPs (e.g., protocol for gaining parental consent and making initial contact with the CBMHPs). Finally, another likely

explanation evidenced by the data collected in the current study is that there are barriers that prevent this interdisciplinary partnership. These barriers to communication and collaboration will be discussed in detail later in this chapter.

## **Research Question 2: Types of CBMHPs with which School Psychologists**

### **Communicate and Collaborate**

Data indicate that school psychologists communicate and collaborate with a variety of CBMHPs including psychiatrists, pediatricians, neurologists, psychologists, social workers, counselors and therapists, and case managers. However, more school psychologists reported communicating (73%) and collaborating (38%) with community-based counselors and therapists and fewer school psychologists reported communicating and collaborating with psychiatrists, pediatricians, and neurologists. Specifically, 39% of school psychologists communicated and 15% collaborated with psychiatrists; 38% communicated and 9% collaborated with pediatricians; and 25% communicated and 6% collaborated with neurologists.

There are a number of potential hypotheses that may explain why school psychologists are more likely to communicate and collaborate with community-based counselors and therapists as compared to other CBMHPs. For example, school psychologists and community-based counselors/therapists may initiate collaboration because they may share similar educational backgrounds and professional training. Specifically, it is likely that both school psychologists and community-based counselors/therapists have training in psychopathology in youth, social-emotional/behavioral interventions, and they may even share an ecological approach to child development; however, additional research is needed to support this hypothesis.

Alternatively, school psychologists and community-based counselors/therapists may feel more competent in this collaborative relationship because they share professional terminology (Foy & Earls, 2005; Shaw, Clayton, Dodd, & Rigby, 2004).

Conversely, there are also a number of potential explanations about why fewer school psychologists reported communicating and collaborating with psychiatrists, pediatricians, and neurologists. One hypothesis consistent with the professional literature is that the differences between the educational and medical diagnostic systems and decision-making processes impede collaboration (Shaw & Woo, 2008). Specifically, the underlying assumption of the medical model is that problems are within a child whereas the tendency for educational models is to view problems within an environmental context (Shaw & Woo, 2008). For example, CBMHPs such as pediatricians, neurologists, and psychiatrists guided by a medical model may react to a child presenting attention problems by evaluating the child for ADHD and prescribing medication. However, practitioners such as school psychologists guided by an ecological perspective may react to the same youth by evaluating not only the specific problem behaviors related to attention but also assessing the environmental factors that may contribute to the presenting problems (e.g., lack of structure in the classroom and at home, classroom distractions, instructional methods that do not match learning style, etc.). These fundamental differences in approaches to psychopathology in youth may result in frustration when communicating and collaborating and at least partially explain why relatively few school psychologists communicate and collaborate with psychiatrists, pediatricians, and neurologists; however, more research is required to evaluate this hypothesis.

Furthermore, it is possible that these professionals (e.g., psychiatrists, pediatricians, and neurologists) may not initiate communication with school psychologists because they may be unaware of school psychologists' training and/or they may not know with whom to communicate. In a survey of pediatricians, Bradley-Klug and colleagues (2010) found that these two factors reduce the likelihood of communication and collaboration between pediatricians and school psychologists; a finding that may extend beyond the pediatrician-school psychologist relationship and more generally apply to relationships between medical professionals and school psychologists. Additional research is warranted to explore this relationship further as well.

#### **Research Question 4: Methods of Communication**

Phone calls, written reports, and face-to-face discussions are the preferred methods of communication for school psychologists as well as the methods that are perceived to be the most effective. These findings were surprising given the widespread availability and use of technologies such as email, texting, and video conferencing. Although these technologies aim to decrease barriers to communication and facilitate interaction, data suggest that school psychologists prefer more traditional methods of communication and perceive them to be most effective.

Face-to-face communication was likely cited as a highly effective method of communication because it allows for a back-and-forth sharing of thoughts and ideas. However, in light of the findings from the current study indicating that face-to-face interaction rarely occurs (i.e., most school psychologists reported communicating and collaborating with CBMHPs between 1 and 4 times during the 2010-2011 school year which may or may not have involved face-to-face interaction), it is surprising that video



conferencing is not perceived to be more effective as it simulates face-to-face interaction while increasing accessibility and reducing travel time for collaboration (Temple, Drummond, Valiquette, & Jozsvai, 2010). Video conferencing, a component of e-health, is increasing in popularity as it facilitates communication between practitioners and across systems that are otherwise fragmented due to a number of barriers (e.g., proximity of providers, office hours, reimbursement for travel, etc.; American Telehealth Association, 2011). E-health may possibly be beneficial because it could facilitate school psychologists, CBMHPs, and parents or guardians to engage in face-to-face communication without having to leave their office, school, home, or workplace.

There are a number of potential explanations for why school psychologists did not endorse video conferencing as their most preferred or effective method of communication. First, video conferencing and other e-health technologies may not be employed as often as they could because of practitioner concerns about compliance with the Health Insurance Portability and Accountability Act (HIPAA) and Family Education Rights and Privacy Act (FERPA). Although secure e-health interfaces that comply with HIPAA and FERPA laws exist (U.S. Department of Education, 2009; U.S. Department of Health and Human Services, 2011), school psychologists and CBMHPs may not be aware of them.

Another hypothesis is that practitioners may simply be unaware of the option to engage in video conferencing. School psychologists and CBMHPs may not be knowledgeable about the various types of alternative methods of communication made possible through e-health (e.g., video conferencing, e-chat, etc.). Similarly, the necessary technology (e.g., computer, broadband internet connection, web cam, speakers,

microphone, etc.) may not be set up in a private location within a school. Even if this equipment is accessible and set in a private location, school psychologists may not know how to use the technology. Without proper training and adequate practice on the use of e-health technology, school psychologists may be intimidated and avoid using these methods of communication.

Finally, CBMHPs may be unwilling to engage in video conferencing due to difficulty billing for these services. In light of the federal initiative to move to e-health and modify billing allowances so that CBMHPs can gain payment for engaging in this type of collaboration (American Telehealth Association, 2011), it is essential for school psychologists to be trained and proficient in engaging in e-health practices. Therefore, school psychologists must be made aware of this method of communication, have access to the proper technology in a secure and private location, and receive training on the use of e-health technology (e.g., secure computerized interface, video conferencing, e-chat, etc.). There is a great need for future research to investigate school psychologists' experiences and perceptions of e-health in order to develop pre-service and in-service training programs targeting their specific areas of need.

#### **Research Question 5: Perceived Benefits and Barriers to Collaboration**

Overall, school psychologists endorsed a myriad of benefits of collaboration with CBMHPs. Specifically, most school psychologists perceived improved student mental health and academic outcomes, the opportunity for cross-disciplinary problem solving, and avoiding the duplication of services to be benefits of collaboration with CBMHPs. Between one-third and one-half of respondents perceived having the opportunity to share resources, feeling valued for the expertise they offer, and improved student physical

health outcomes to be benefits. Yet, despite the evidence that school psychologists overwhelmingly perceive there are benefits of collaboration with CBMHPs, most either do not engage in such collaboration or do so infrequently.

As suggested earlier, the discrepancy between school psychologists' perceived positive outcomes of collaboration with CBMHPs and their low rates of collaboration in practice may be explained by a number of barriers to collaboration. Specifically, 57% of school psychologists indicated that CBMHPs are not accessible, 54% indicated that there is not enough time to collaborate, and 48% indicated that obtaining parent permission hinders collaboration. The barriers endorsed in the current study are consistent with the extant literature on barriers to interdisciplinary collaboration (Carlson, 2008; Drotar, Palmero, & Barry, 2004; Foy & Earls, 2005; Nastasi, Varjas, Moore, & Bernstein, 2003; Shaw, Clayton, Dodd, & Rigby, 2004; Shaw & Woo, 2008) and are discussed in greater detail in the following paragraphs.

CBMHPs may not be accessible to school psychologists because of differences in the work schedules of these professionals. For example, many school psychologists make phone calls in the early morning (e.g., between 7:00 am and 9:00 am) before the school day begins or after school (between 2:00 pm and 5:00 pm). However, CBMHPs may not be in their office before the start of the school day and they may be busy working with clients at the end of the school day. CBMHPs may return phone calls in the early evening when school psychologists are typically not available. It may also be possible that CBMHPs are not accessible because either they do not share their contact information with school personnel or the caregivers of youth seeing CBMHPs do not share the community-based provider's contact information with the school psychologist.

In order to more effectively ameliorate barriers, additional research is warranted. Specifically, it is important to determine which if any of these barriers relate to communication frequencies or serve as moderators between school psychologist's perceptions of collaboration benefits and collaboration frequencies.

**Research Question 6: Frequency of Communication and Collaboration Related to Demographic Variables and Professional Characteristics**

With respect to differences in frequency of communication, the number of hours of professional development that school psychologists received was the only variable to result in significant findings. Specifically, school psychologists who received more than 10 hours of professional development on the topic of youth mental health during the 2010-2011 school year communicated significantly more frequently with CBMHPs than those who did not receive any professional development on this topic. Group differences in collaboration frequencies related to the number of hours of professional development that school psychologists received were not significant. Additionally, no significant group differences in communication or collaboration frequencies were found related to the highest degree earned by the school psychologist, the years of experience of the school psychologist, the socio-economic status of the students served by the school psychologist, the number of students served by the school psychologist, or the type of community in which most students resided.

There are a variety of potential hypothesis about why the rates of communication differed depending on the number of hours of professional development that school psychologists received. First, school psychologists who received more than 10 hours of ongoing training on the topic of youth mental health may acquire a greater understanding

of the negative implications that mental health problems have on child development which in turn may result in an increased urgency for communication. In receiving ongoing professional development, they may also be aware of the potential benefits of interdisciplinary collaboration, which may increase their communication practices. Furthermore, professional development may provide practitioners with strategies for effective interdisciplinary collaboration resulting in more frequent communication. Alternatively, the relationship between attending more than 10 hours of professional development and more frequent communication may be mediated by another variable altogether. For instance, school psychologists who are interested in the topic of mental health in youth or value social-emotional wellness may seek out professional development on the topic and communicate with CBMHPs more frequently. Data from the current study cannot determine causality of this relationship or whether there are other mediating factors contributing to this relationship. Therefore, additional research is warranted.

There are a few hypotheses offered related to why communication and collaboration rates were not significantly different depending on the highest degree earned by the school psychologist, the years of experience of the school psychologist (close to reaching significance), the socio-economic status of the students served by the school psychologist, the number of students served by the school psychologist, and the type of community in which most students resided. First, this finding may simply indicate that school psychologists' rate of communication and collaboration with CBMHPs does not differ based on these demographic variables and professional characteristics. Alternatively, it is possible that the population effect is small and the lack

of significance is due to an inadequate sample size (Gall, Borg, & Gall, 1996).

Measurement error related to the survey design may explain this finding as well (Gall, Borg, & Gall, 1996). Future research with a larger sample size, and possibly a more sensitive measurement tool, is needed to evaluate these relationships further.

### **Research Question 7: Predictors of Communication and Collaboration**

Significant results were not obtained for predicting communication and collaboration frequency by the percentage of students with mental disorders.

Examination of non-significant predictors suggest the number of students served by the school psychologist with internalizing and combined disorders may predict more frequent communication and collaboration, yet the number of students with ADHD may predict less frequent collaboration between school psychologists and CBMHPs. This survey item yielded inconsistent response formats, which resulted in assumptions needing to be made in order to manipulate these data for analysis. Specifically, when responding to the item, “Please estimate the percentage of students you currently serve with a mental disorder diagnosis of: Attention Deficit Hyperactivity Disorder (ADHD); anxiety; depression; Pervasive Developmental Disorder (e.g., Autism Spectrum Disorder, Asperger’s Syndrome); bipolar disorder; schizophrenia; other (please specify)”, some respondents wrote in an exact percentage (the preferred response), while others wrote in a percentage range, and still others left the items entirely blank. In order to include these data in the analysis, the mean of the ranges were imputed and 0 was imputed in response lines that were left blank. However, these manipulations may not be accurate representations of the percentage of students with each disorder served by the respondents. In order to more reliably answer this research question, this item should be reworded in future research.

One suggested revision to this question might be, “Please estimate the percentage of students you currently serve with a diagnosis of: Attention Deficit Hyperactivity Disorder (ADHD); a predominantly internalizing disorder (e.g., anxiety; depression); or a predominantly externalizing disorder (e.g., Pervasive Developmental Disorder, Autism Spectrum Disorder, Asperger’s Syndrome, bipolar disorder, schizophrenia).” A note below the item should be included that asks respondents to estimate exact percentages and not to include ranges or greater than/less than values. The note should also inform respondents that “items left blank will be assumed to indicate 0% and that percentages should not add to 100% unless all students served have a mental health diagnosis.”

### **Implications for Practice: Strategies to Promote Collaboration between School Psychologists and CBMHPs**

Findings from this study emphasize the need for school psychologists to increase communication and collaboration with CBMHPs. Practitioners should not only increase the frequency of contact they have with CBMHPs, but they should also foster ongoing relationships. These findings support the need for pre-service training and ongoing professional development on topics related to youth mental health as school psychologists who received more than 10 hours of professional development communicated significantly more than those who received none. Practitioners and school administrators should advocate for professional development specific to topics related to youth mental health and collaboration with CBMHPs. National and state professional conferences, as well as district professional development opportunities are venues appropriate for providing practitioners with ongoing training.

Additionally, it is vital for school psychology training programs to incorporate coursework and practical experiences emphasizing benefits as well as strategies for engaging in collaborative practices with CBMHPs. For instance, opportunities for interdisciplinary collaboration could be provided early in school psychology pre-service coursework (e.g., first-year school psychology, social work, psychiatry students could be paired and required to complete a collaborative group project related to a shared topic). Furthermore, school psychology interns and CBMHP interns (e.g., clinical psychology or social work interns placed in community-based clinics, etc.) could be required to form dyad partnerships and engage in collaboration during their internship year. Additionally, considering that most school psychologists hold a specialist degree (Curtis et al., 2008), coursework on the topic of interdisciplinary collaboration should be a required component of not only the doctoral but the specialist degree as well.

There is a critical need for school psychologists to reduce the barriers to collaboration between CBMHPs in order to optimize outcomes for youth. Considering that many school psychologists indicated that CBMHPs are inaccessible, it is important for school psychologists to launch a local outreach campaign prior to needing to collaborate on behalf of a student, in order to make contact with CBMHPs and to determine the most effective method of communication with each professional. Local outreach initiatives might include, but are not limited to, visiting community-based clinics in order to make face-to-face introductions, sending introductory materials (e.g., email blasts or mailing information cards) to local agencies, hosting a district-wide mental health meet-and-greet/information session, joining local community-based mental health organizations, and writing about the potential benefits of collaboration for



professional journals as well as local publications. During these initial interactions, school psychologists can provide CBMHPs with a contact information card that includes multiple methods for contacting the school psychologist (e.g., office and cell phone numbers, email, school phone number, etc.) as well as information highlighting the ways that their training can support the community-based efforts. School psychologists can also inquire about the training and work of the CBMHPs, and investigate opportunities for collaboration.

Additionally, considering that many school psychologists reported not having enough time to collaborate with CBMHPs, it is important for school psychologists and their supervisors to allocate and protect time for school psychologists to engage in collaborative practices (e.g., community outreach, make phone calls, write emails or letters, conduct video conferencing, etc.). School psychologists may not have enough time to collaborate with CBMHPs because of high student-to-school psychologist ratios (Curtis et al., 2002) traditional special education eligibility responsibilities (e.g., assessment, IEP meetings, and report writing; Curtis et al., 2002; Hosp & Reschly, 2002), burden of paperwork or daily meetings, or a lack of time management within the school setting (Curtis et al., 2004).

Although additional research is warranted in this area, school administrators and school psychologists can take steps in order to secure and protect time for the school psychologist to engage in interdisciplinary collaboration. Strategies might include school administrators reducing student-to-school psychologist ratio by hiring additional school psychologists or reducing the number of schools that school psychologists serve (Curtis, et al., 2002) and releasing the school psychologist from other tasks (e.g., bus duty, lunch

duty, etc.). Also, it will be important for school psychologists to schedule and protect weekly interdisciplinary collaboration time by reminding school personnel, students, and parents that they cannot schedule other meetings or tasks during this time. School psychologists may find it helpful to post a visual reminder (e.g., weekly schedule) or to block off the allocated collaboration time in their electronic calendar. Additionally, school psychologists may want to consider the use of e-health (e.g., video conferencing, e-chat, etc.) in order to collaborate with CBMHPs without having to leave their school building.

Finally, considering that many school psychologists reported that obtaining parent permission to discuss the student with CBMHPs hinders collaboration, it may be helpful for school psychologists to keep the required FERPA and HIPAA documentation for sharing of educational and health information in a convenient and easily accessible location. Thus, when an opportunity for collaboration arises, the school psychologist can immediately begin the process of obtaining parental consent. This finding also suggests a need to establish and maintain rapport with parents of the students served by the school psychologist. When doing so, it is important to consider cultural issues related to perceptions of education as well as mental health in order to reduce potential barriers to collaboration. Additionally, it may be advantageous to educate parents about the importance and benefits of interdisciplinary collaboration and build trust between parents and school psychologists in order to encourage them to share information related to the mental health and CBMHPs serving their children.

## **Limitations**

This study has several potential limitations that must be considered when interpreting the results. One limitation of this study is the small sample size. Instead of mailing surveys to 446 practicing school psychologists as originally proposed, surveys were mailed to 270 school psychologists because this was the total number of practicing school psychologists available in the 2010-2011 Florida Association of School Psychologists membership directory. According to a power analysis conducted using Cohen's (1988) guidelines for a 3 group ANOVA and for a multiple regression containing 4 predictor variables with a medium effect size and an alpha level of 0.05, approximately 156 surveys would likely result in adequate power. However, only 80 useable surveys were obtained. Therefore, the sample size of the current study may not have been large enough to detect significance.

Another threat to this study involves ecological validity, which is the degree to which a researcher can generalize the results of a study across settings and/or non-experimental situations (Gall, Borg, & Gall, 1996). Specifically, this study relies on self-report data from a sample of members of the Florida Association of School Psychologists (FASP). There is the possibility that the responses provided by participants may not accurately reflect actual communication and collaboration practices because there is the possibility that participants may misunderstand a question or questions and respond in a manner that does not reflect their true practices, perceptions, or beliefs. Participants may formulate the assumption that the investigator desires communication and collaboration with CBMHPs to occur and as a result may overestimate their actual practices. Stating that the survey is anonymous is designed to minimize the likelihood of this occurrence, as

well as piloting the survey with practicing school psychologists before administering to the sample.

Another possible threat to this study includes population validity. Population validity is the degree to which results from a study can generalize to a larger population (Gall, Borg, & Gall, 1996). This study employs a sample of school psychologists who are members of FASP. As a result, the data gathered in this study may not represent the practices of other school psychologists in the state of Florida or school psychologists practicing outside of Florida.

### **Future Directions**

Because this is the first study to examine the frequency and nature of communication and collaboration between school psychologists and CBMHPs on behalf of youth with mental health problems, further research is warranted in order to replicate and extend the current findings. This study should be replicated with a larger, more nationally representative sample in order to determine whether non-significant results were due to an inadequate sample size. Also, collecting more specific and detailed data on the purposes and barriers to collaboration could augment the current research. Although a few respondents shared anecdotal comments, the use of open-ended questions throughout the survey might yield important data, such as the reasons school psychologists engage in collaboration and the ways in which specific barriers hinder collaboration. Additionally, as previously discussed, by rewording the survey item related to the percentage of students with mental health problems, more reliable data could be gleaned.

Another direction for future research is to specifically focus on exploring the factors that relate to the frequency of communication and collaboration with CBMHPs. Targeted strategies to promote collaboration can be generated by investigating how the frequency of communication and collaboration relates to the perceived barriers of collaboration as well as how it relates to additional professional characteristics of the school psychologist (e.g., the number of schools the school psychologist serves, whether or not the school has established procedures for communication, grade level of students served, etc.).

Another direction for future research is to explore the perceptions and experiences of school psychologists specifically related to collaboration through e-health methods. Additionally, by exploring the specific barriers to employing e-health communication methods (e.g., video conferencing) strategies to ameliorate these obstacles can be developed and implemented. Finally, research investigating the perceptions and experiences of CBMHPs in regard to communication and collaboration with school psychologists is necessary in order to understand and ameliorate other barriers to interdisciplinary collaboration on behalf of students with mental health problems.

## **Conclusion**

Although it is widely acknowledged that collaboration between school psychologists and CBMHPs has the potential to result in a myriad of benefits for youth with mental illness (e.g., increase early identification and intervention of mental illness through the sharing of data from multiple sources and across settings, coordinate school and community resources, etc.), this study finds that communication and collaboration

between these two groups of professionals occurs infrequently. Additionally, findings from the current study suggest that although school psychologists perceive many benefits to interdisciplinary collaboration there are barriers, such as a lack of time and scheduling conflicts, that hinder this ongoing partnership. Once rapport is established, however, these professionals may regularly turn to one another for consultation.

Although both school psychologists and CBMHPs are not discrete professions and they likely have expertise that overlaps, they each are in unique positions to offer insight on individual students, which when combined, have the potential to enhance student outcomes. Therefore, strategies aimed at fostering collaboration are vital for optimizing the mental health of students in schools. Gaining a better understanding of the barriers to collaboration and the effective strategies in fostering ongoing professional partnerships will help improve the mental health of youth in schools.

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## Appendices

**Appendix A: Survey Cover Letter  
(Modified to Fit in Current Document)**

**Communication and Collaboration with  
Community-Based Mental Health Professionals**

**School Psychologists' Communication and Collaboration  
with Community-Based Mental Health Professionals Survey  
eIRB # 3107**

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March 18, 2011

Dear School Psychologist,

I am writing to ask for your help in understanding the degree of collaboration that occurs between school psychologists and community-based mental health professionals (e.g., psychiatrists, licensed mental health counselors, etc.) on behalf of students with mental disorders. The most effective way of learning about this collaboration is by asking school psychologists to share information about their professional practices, thoughts, and opinions. I am contacting you because you are a FASP member who indicated willingness to be contacted for research purposes on your annual membership form. You are one of only a small number of school psychologists that have been selected to help in this study, and as such, your feedback is extremely valuable.

The questions should only take about 10 minutes to complete. Your responses are voluntary, anonymous (i.e., your name will not be linked to your responses), and will be kept confidential. If you have any questions about this survey of school psychologists, please contact Audra Walsh, the principal investigator, by telephone at 727.599.3624 or by email at [audrawalsh@gmail.com](mailto:audrawalsh@gmail.com). This study has been reviewed and approved by the University of South Florida Institutional Review Board, and if you have any questions about your rights as a participant in this study, you may contact the Board by telephone at 813.974.5638. The Florida Association of School Psychologists (FASP) encourages school psychologists to participate in the completion of surveys which increase the knowledge base about the practice of school psychologists in the state of Florida. This survey has been approved by the Research Committee and the FASP Executive Board.

Thank you for your participation. Taking a few minutes to share your professional practices, thoughts, and opinions about collaborating with community-based mental health professionals allows us to gain critical insight into the degree of collaboration between school psychologists and community-based mental health professionals.

I hope you enjoy completing the questionnaire and I look forward to receiving your responses.

Many Thanks,

Audra St. John Walsh  
Graduate Student in School Psychology  
University of South Florida

Kathy L. Bradley-Klug, Ph.D.  
Associate Professor and Coordinator  
Graduate Programs in School Psychology  
University of South Florida

## Appendix B: Communication and Collaboration Survey (Modified to Fit in Current Document)

If you currently work in a school full or part-time, please continue. If you **DO NOT work in a school setting**, please **DISCONTINUE** at this point, check the box below, and return the survey in the enclosed return envelope.

**I do not currently work in a school.**

**CBMHPs** refers to “Community-Based Mental Health Professionals”. Examples of CBMHPs are non-school based pediatric psychiatrists, pediatricians, psychologists, social workers, licensed mental health counselors, & case managers. Examples of services commonly provided by CBMHPs are diagnostic assessment, individual or group psychotherapy, medication evaluations, etc.

PLEASE RESPOND TO THE FOLLOWING ITEMS BASED ON THE **2010-2011 SCHOOL YEAR.**

### **PART 1: Communication with Community Based Mental Health Professionals**

For the purpose of this survey, **COMMUNICATION** refers to a one-time, unidirectional sharing of information on behalf of students (e.g., a phone call or a letter sent to or from the CBMHP).

For the purpose of this survey, the term **mental health problems** refers to social, emotional, and/or behavioral problems a student presents in or outside of school (i.e., these problems include, but are not limited to, diagnosed mental disorders such as ADHD, anxiety, and autism and also include, but are not limited to, non-diagnosed disorders such as symptoms of inattention, anxiousness, irritability, and social skills deficits).

Students with learning disabilities, intellectual disabilities, or physical health problems may experience co-occurring mental health problems, however, learning disabilities, intellectual disabilities, or physical health problems alone do not constitute mental health problems (e.g., a student that sees a neurologist for seizures but does not experience any social, emotional, and/or behavioral problems would not be considered to have mental health problems).

PLEASE **USE THE ABOVE DEFINITION OF COMMUNICATION TO ANSWER QUESTIONS 1-10.**

1. During the **2010-2011** school year, with which **Community-Based Mental Health Professionals (CBMHPs)**, see bold box above) have you **communicated** on behalf of students with mental health problems? **(mark all that apply)**

- I **HAVE NOT** communicated with CBMHPs **(If Not, skip to Part 2 on p. 4)**
- Psychiatrists or pediatric psychiatrists
- Pediatricians
- Neurologists or pediatric neurologists
- Psychologists
- Social workers
- Counselors/Therapists
- Case managers
- Other (please specify): \_\_\_\_\_

## Appendix B (Continued)

2. During the 2010-2011 school year, how often have you **communicated** (see definition above) with CBMHPs on behalf of students with mental health problems? **(mark only one)**

- |  |   |
|--|---|
| <input type="checkbox"/> One to four times a year  | <input type="checkbox"/> Two to three times a month |
| <input type="checkbox"/> Five to nine times a year | <input type="checkbox"/> Once a week                |
| <input type="checkbox"/> Once a month              | <input type="checkbox"/> More than once a week      |

### Purposes of Communication (Questions 3-7):

3. During the 2010-2011 school year, how often have you **communicated** with CBMHPs to **provide** information (e.g., copy of IEP, grades, etc.) about a student with a mental health problem? **(mark only one)**

- |  |   |
|--|---|
| <input type="checkbox"/> Never                     | <input type="checkbox"/> Two to three times a month |
| <input type="checkbox"/> One to four times a year  | <input type="checkbox"/> Once a week                |
| <input type="checkbox"/> Five to nine times a year | <input type="checkbox"/> More than once a week      |
| <input type="checkbox"/> Once a month              |   |

4. During the 2010-2011 school year, how often have you **communicated** with CBMHPs to **obtain** information (e.g., obtain information regarding community treatment, diagnosis, medication dosage, etc.) about a student with a mental health problem? **(mark only one)**

- |  |   |
|--|---|
| <input type="checkbox"/> Never                     | <input type="checkbox"/> Two to three times a month |
| <input type="checkbox"/> One to four times a year  | <input type="checkbox"/> Once a week                |
| <input type="checkbox"/> Five to nine times a year | <input type="checkbox"/> More than once a week      |
| <input type="checkbox"/> Once a month              |   |

5. During the 2010-2011 school year, how often have you **communicated** with CBMHPs **to inform the development of interventions** for a student with a mental health problem? **(mark only one)**

- |  |   |
|--|---|
| <input type="checkbox"/> Never                     | <input type="checkbox"/> Two to three times a month |
| <input type="checkbox"/> One to four times a year  | <input type="checkbox"/> Once a week                |
| <input type="checkbox"/> Five to nine times a year | <input type="checkbox"/> More than once a week      |
| <input type="checkbox"/> Once a month              |   |

6. During the 2010-2011 school year, how often have you **communicated** with CBMHPs **to plan for progress monitoring** of a student with a mental health problem? **(mark only one)**

- |  |   |
|--|---|
| <input type="checkbox"/> Never                     | <input type="checkbox"/> Two to three times a month |
| <input type="checkbox"/> One to four times a year  | <input type="checkbox"/> Once a week                |
| <input type="checkbox"/> Five to nine times a year | <input type="checkbox"/> More than once a week      |
| <input type="checkbox"/> Once a month              |   |

7. During the 2010-2011 school year, how often have you **communicated** with CBMHPs **to make a referral for community-based treatment** for a student with a mental health problem? **(mark only one)**

- |  |   |
|--|---|
| <input type="checkbox"/> Never                     | <input type="checkbox"/> Two to three times a month |
| <input type="checkbox"/> One to four times a year  | <input type="checkbox"/> Once a week                |
| <input type="checkbox"/> Five to nine times a year | <input type="checkbox"/> More than once a week      |
| <input type="checkbox"/> Once a month              |   |

8. In your professional experience, what have you found to be the **most effective** method of **providing** information to CBMHPs on behalf of a student with a mental health problem? **(mark only one)**

- |  |  |
|--|--|
| <input type="checkbox"/> Phone call                | <input type="checkbox"/> E-mail                        |
| <input type="checkbox"/> Written report            | <input type="checkbox"/> Text message                  |
| <input type="checkbox"/> Face-to-face discussion   | <input type="checkbox"/> Video conferencing            |
| <input type="checkbox"/> Handwritten or typed note | <input type="checkbox"/> Other (please specify): _____ |

## Appendix B (Continued)

9. In your professional experience, what have you found to be the **most effective** method of **obtaining** information from CBMHPs about a student with a mental health problem? **(mark only one)**

- |  |  |
|--|--|
| <input type="checkbox"/> Phone call                | <input type="checkbox"/> E-mail                        |
| <input type="checkbox"/> Written report            | <input type="checkbox"/> Text message                  |
| <input type="checkbox"/> Face-to-face discussion   | <input type="checkbox"/> Video conferencing            |
| <input type="checkbox"/> Handwritten or typed note | <input type="checkbox"/> Other (please specify): _____ |

10. What is your **most preferred** method of **communication** with CBMHPs? **(mark only one)**

- |  |  |
|--|--|
| <input type="checkbox"/> Phone call                | <input type="checkbox"/> E-mail                        |
| <input type="checkbox"/> Written report            | <input type="checkbox"/> Text message                  |
| <input type="checkbox"/> Face-to-face discussion   | <input type="checkbox"/> Video conferencing            |
| <input type="checkbox"/> Handwritten or typed note | <input type="checkbox"/> Other (please specify): _____ |



## Appendix B (Continued)

### **PART 2: Collaboration with Community Based Mental Health Professionals**

For the purpose of this survey, **COLLABORATION** refers to the ongoing, bi-directional sharing of information by two or more people who are working together in planning and problem-solving to promote positive outcomes for a student or students (e.g., ongoing consultation between the school psychologist and a CBMHP to coordinate treatment/intervention efforts).

**PLEASE USE THE ABOVE DEFINITION OF COLLABORATION TO ANSWER THE FOLLOWING QUESTIONS.**

11. During the 2010-2011 school year, with which CBMHPs have you **collaborated** on behalf of students with mental health problems? **(mark all that apply)**

- I **HAVE NOT** collaborated with CBMHPs during the 2010-2011 school year **(If Not, skip to item 17 on p. 5)**
- Psychiatrists or pediatric psychiatrists
- Pediatricians
- Neurologists or pediatric neurologists
- Psychologists
- Social workers
- Counselors
- Case managers
- Other (please specify): \_\_\_\_\_

12. During the 2010-2011 school year, how often have you **collaborated** with CBMHPs on behalf of students with mental health problems? **(mark only one)**

- One to four times a year
- Five to nine times a year
- Once a month
- Two to three times a month
- Once a week
- More than once a week

#### **Purposes of Collaboration (Questions 13-16):**

13. During the 2010-2011 school year, how often have you **collaborated** with CBMHPs **to jointly develop interventions** for a student with mental health problems? **(mark only one)**

- Never
- One to four times a year
- Five to nine times a year
- Once a month
- Two to three times a month
- Once a week
- More than once a week

14. During the 2010-2011 school year, how often have you **collaborated** with CBMHPs **to progress monitor** an intervention/treatment effect for a student with mental health problems (e.g., monitor treatment effectiveness or side effects)? **(mark only one)**

- Never
- One to four times a year
- Five to nine times a year
- Once a month
- Two to three times a month
- Once a week
- More than once a week

## Appendix B (Continued)

15. During the 2010-2011 school year, how often have you **collaborated** with CBMHPs **to evaluate interventions** for a student with mental health problems? **(mark only one)**

- |  |   |
|--|---|
| <input type="checkbox"/> Never                     | <input type="checkbox"/> Two to three times a month |
| <input type="checkbox"/> One to four times a year  | <input type="checkbox"/> Once a week                |
| <input type="checkbox"/> Five to nine times a year | <input type="checkbox"/> More than once a week      |
| <input type="checkbox"/> Once a month              |   |

16. During the 2010-2011 school year, how often have you **collaborated** with CBMHPs **to modify interventions** for a student with mental health problems? **(mark only one)**

- |  |   |
|--|---|
| <input type="checkbox"/> Never                     | <input type="checkbox"/> Two to three times a month |
| <input type="checkbox"/> One to four times a year  | <input type="checkbox"/> Once a week                |
| <input type="checkbox"/> Five to nine times a year | <input type="checkbox"/> More than once a week      |
| <input type="checkbox"/> Once a month              |   |

17. What are the **benefits** of collaboration with CBMHPs? **(mark all that apply)**

- There are no benefits to collaboration with CBMHPs **(If checked, continue on to question 18)**
- Improved student physical health outcomes
- Improved student mental health outcomes
- Improved student academic outcomes
- Avoiding duplication of services
- Opportunity for cross-disciplinary problem-solving
- Opportunity to share resources
- Feeling valued for the expertise you offer to other professionals
- Assessing student progress across different settings
- Other (please specify): \_\_\_\_\_

18. What are the **barriers** to collaboration with CBMHPs? **(mark all that apply)**

- There are no barriers to collaboration with CBMHPs **(If checked, continue on to question 19)**
- There is not enough time
- CBMHPs are not accessible
- Obtaining parent permission to collaborate
- Differing views on child development
- Differing views on mental health services
- It is not beneficial to the interventions or progress monitoring of students
- I do not know with which CBMHPs to collaborate
- Other (please specify): \_\_\_\_\_

19. To what extent do you agree or disagree with this statement: "**Collaboration** between school psychologists and CBMHPs is critical to the **overall school success** (i.e., academic performance, social relationships, and emotional well-being) of students with mental health problems."

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

## Appendix B (Continued)

### PART 3: Demographics

PLEASE RESPOND TO THE FOLLOWING ITEMS BASED ON THE 2010-2011 SCHOOL YEAR.

Gender: 20. Year in which you were born: 19\_\_\_\_\_

- Female
- Male
- Transgender

21. Ethnicity: **(mark only one)** 22. Race: **(mark all that apply)**

- Hispanic or Latino
- Not Hispanic or Latino
- American Indian or Alaska Native
- Asian
- Black or African American
- Native Hawaiian or Other Pacific Islander
- White
- Other (please specify): \_\_\_\_\_

23. What is the highest degree you have earned?

- Masters (e.g., M.A., M.S., MBA)
- Specialist or equivalent (e.g., CAGS, M.A. +30, etc.)
- Doctorate (e.g., Ph.D., Psy.D., Ed.D.)

24. How many years of experience (post-degree) do you have in school psychology?

- 1-5 years
- 6-10 years
- 10+

25. Do you work full or part time?

- Full time
- Part time

26. In total, how many students do you serve (i.e., sum of total student population at all schools you serve)?

- <500
- 500-999
- 1000+

27. Please estimate the percentage of students you currently serve with a mental disorder diagnosis of:

- \_\_\_\_\_ ADHD
- \_\_\_\_\_ Anxiety
- \_\_\_\_\_ Depression
- \_\_\_\_\_ Pervasive Developmental Disorder (e.g., Autism Spectrum Disorder, Asperger's Syndrome)
- \_\_\_\_\_ Bipolar Disorder
- \_\_\_\_\_ Schizophrenia
- \_\_\_\_\_ Other (please specify): \_\_\_\_\_

## Appendix B (Continued)

28. Please estimate the percentage of students you currently serve who receive mental health services from CBMHPs:
- |                                  |                                   |
|----------------------------------|-----------------------------------|
| <input type="checkbox"/> 0%      | <input type="checkbox"/> 41%-60%  |
| <input type="checkbox"/> 1%-20%  | <input type="checkbox"/> 61%-80%  |
| <input type="checkbox"/> 21%-40% | <input type="checkbox"/> 81%-100% |
29. During the 2010-2011 school year, approximately how many hours of professional development did you receive in mental health problems related to children and adolescents? **(mark only one)**
- 0 hours
  - 1-10 hours
  - 10+ hours

## Appendix B (Continued)

### PART 4: Schools

PLEASE RESPOND TO THE FOLLOWING ITEMS BASED ON THE 2010-2011 SCHOOL YEAR.

31. In which type of community do the majority of the students you serve reside? **(mark only one)**

- Urban
- Suburban
- Rural

32. How many schools do you currently serve? \_\_\_\_\_ schools

*Please complete a school information box for **each** school in which you currently work.  
(For example, if you only work in one setting please fill out only one column.)*

<b>School #1 Information</b>	<b>School #2 Information</b>
<p>33. How many hours per week do you work in this setting? _____ hours</p>	<p>How many hours per week do you work in this setting? _____ hours</p>
<p>34. This is a:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Public School <b>(mark only one)</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Traditional</li> <li><input type="checkbox"/> Magnet</li> <li><input type="checkbox"/> Alternative</li> </ul> </li> <li><input type="checkbox"/> Private School <b>(mark only one)</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> No religious affiliation</li> <li><input type="checkbox"/> Faith-based</li> </ul> </li> </ul>	<p>This is a:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Public School <b>(mark only one)</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Traditional</li> <li><input type="checkbox"/> Magnet</li> <li><input type="checkbox"/> Alternative</li> </ul> </li> <li><input type="checkbox"/> Private School <b>(mark only one)</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> No religious affiliation</li> <li><input type="checkbox"/> Faith-based</li> </ul> </li> </ul>
<p>35. Does this school receive Title 1 funding?</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Yes</li> <li><input type="checkbox"/> No</li> </ul>	<p>Does this school receive Title 1 funding?</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Yes</li> <li><input type="checkbox"/> No</li> </ul>
<p>36. What grade levels does this school include? <b>(mark all that apply)</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Preschool</li> <li><input type="checkbox"/> Elementary School</li> <li><input type="checkbox"/> Middle/Jr. High School</li> <li><input type="checkbox"/> K-8</li> <li><input type="checkbox"/> High School</li> <li><input type="checkbox"/> Other (please specify): _____</li> </ul>	<p>What grade levels does this school include? <b>(mark all that apply)</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Preschool</li> <li><input type="checkbox"/> Elementary School</li> <li><input type="checkbox"/> Middle/Jr. High School</li> <li><input type="checkbox"/> K-8</li> <li><input type="checkbox"/> High School</li> <li><input type="checkbox"/> Other (please specify): _____</li> </ul>
<p>37. Does this school have established procedures for <b>contacting</b> CBMHPs?</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Yes</li> <li><input type="checkbox"/> No</li> </ul>	<p>Does this school have established procedures for <b>contacting</b> CBMHPs?</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Yes</li> <li><input type="checkbox"/> No</li> </ul>
<p>38. Does this school have established procedures for <b>collaboration</b> with CBMHPs?</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Yes</li> <li><input type="checkbox"/> No</li> </ul>	<p>Does this school have established procedures for <b>collaboration</b> with CBMHPs?</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Yes</li> <li><input type="checkbox"/> No</li> </ul>

## Appendix B (Continued)

<b>School #3 Information</b>	<b>School #4 Information</b>
<p>How many hours per week do you work in this setting? _____ hours</p> <p>This is a:</p> <p><input type="checkbox"/> Public School <b>(mark only one)</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Traditional</li> <li><input type="checkbox"/> Magnet</li> <li><input type="checkbox"/> Alternative</li> </ul> <p><input type="checkbox"/> Private School <b>(mark only one)</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> No religious affiliation</li> <li><input type="checkbox"/> Faith-based</li> </ul> <p>Does this school receive Title 1 funding?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p>What grade levels does this school include? <b>(mark all that apply)</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Preschool</li> <li><input type="checkbox"/> Elementary School</li> <li><input type="checkbox"/> Middle/Jr. High School</li> <li><input type="checkbox"/> K-8</li> <li><input type="checkbox"/> High School</li> <li><input type="checkbox"/> Other (please specify): _____</li> </ul> <p>Does this school have established procedures for <b><u>contacting</u></b> CBMHPs?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p>Does this school have established procedures for <b><u>collaboration</u></b> with CBMHPs?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p>	<p>How many hours per week do you work in this setting? _____ hours</p> <p>This is a:</p> <p><input type="checkbox"/> Public School <b>(mark only one)</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Traditional</li> <li><input type="checkbox"/> Magnet</li> <li><input type="checkbox"/> Alternative</li> </ul> <p><input type="checkbox"/> Private School <b>(mark only one)</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> No religious affiliation</li> <li><input type="checkbox"/> Faith-based</li> </ul> <p>Does this school receive Title 1 funding?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p>What grade levels does this school include? <b>(mark all that apply)</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Preschool</li> <li><input type="checkbox"/> Elementary School</li> <li><input type="checkbox"/> Middle/Jr. High School</li> <li><input type="checkbox"/> K-8</li> <li><input type="checkbox"/> High School</li> <li><input type="checkbox"/> Other (please specify): _____</li> </ul> <p>Does this school have established procedures for <b><u>contacting</u></b> CBMHPs?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p>Does this school have established procedures for <b><u>collaboration</u></b> with CBMHPs?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p>

**Any additional comments/feedback you have regarding collaboration between school psychologists and CBMHPs would be greatly appreciated.**

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**Thank you for your time and completion of this survey!**