ACADEMIC PREDICTORS OF THE CHILD AND ADOLESCENT
FUNCTIONING ASSESSMENT SCALE IN A SCHOOL-BASED MENTAL
HEALTH PROGRAM

By

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Dedicated to

My husband, Javier Guillen,

My mom, Mona Castro,

and

In loving memory of

My father, Felix Castro, Jr.
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Academic Predictors of the Child and Adolescent Functioning Assessment Scale in a School-Based Mental Health Program

Abstract

By

EVELYN CASTRO-GUILLEN

One in five (20%) children and youth meet diagnostic criteria for a mental disorder which has been shown to be associated with functional impairment at home, school, and community. Between 75-80% of children and youth do not receive mental health services due to barriers including funding, transportation, and the lack of mental health providers in low income areas. Between 70-80% of children and youth who receive mental health services receive them at school making schools the primary provider of mental health services.

This study addresses the use of the Child and Adolescent Functional Assessment Scale (CAFAS) to assess functional impairment in children and youth referred for school-based mental health services (SBMHS). The aims of the study are: (a) to identify the characteristics of students referred for school-based mental health services, (b) to explore the level of impairment of students referred for SBMHS as measured by the CAFAS total score at time of enrollment and discharge, and (3) to examine the relationship between academic variables and the discharge CAFAS total score.

The study utilized a secondary data set comprised of an aggregate sample of 144 students from two urban like school districts in Los Angeles County. Available
demographic data indicates the sample included 75 (41%) males, 59 (52%) females, with identified ethnicity as 82 (56%) Latino, 30 (20%) African-American and 15 (10%) Caucasian. Data analysis included a multiple regression analysis on 89 students with complete data.

Findings indicate that baseline CAFAS total scores were positively associated with CAFAS total scores at discharge. Results from the multiple regression analysis demonstrated no association between discharge CAFAS total scores and school district and length of enrollment. Teacher ratings of students’ frequency of emotional upset at school were statistically significant and positively associated with discharge CAFAS total scores. Results are discussed in terms of length of enrollment, use of teacher ratings for screenings and strategies to improve the quality of SBMH data.
CHAPTER 1

Introduction

Statement of the problem

It is estimated that one in five (20%) school age children in the United States meet diagnostic criteria for a mental illness yet 75—80% do not receive mental health services (U.S. Surgeon General’s Report, 1999, 2000; Kataoka, Zhang & Wells, 2002). Youth (13 – 18 years old) in particular are disproportionately affected by mental disorders based on data from the National Comorbidity Study-Adolescent Supplement (NCS-A) – a face to face survey of more than 10,000 participants (Merikangas, He, Burstein, Swanson, Avenevoli, Cui & Swendsen, 2010). In addition, the numbers of children involved with child welfare and juvenile justice have mental problems at a greater proportion than children and youth in the general population, 50% and 67% - 70% respectively (Masi & Cooper, 2006). While mental health problems are universal, crossing all socioeconomic and cultural backgrounds, many afflicted children live in low income urban areas with limited mental health resources or encounter barriers accessing the resources that are available. It is estimated that twenty-one percent (21%) of low income children (ages 6 – 17) have mental health problems with fifty-seven percent (57%) of these children coming from households at or below the federal poverty level (Howell, 2004). These findings suggest a disparity in mental health care for low income children and youth.

Mental health, development and functioning

Mental health is critical to healthy development and functioning. The National Center for Children in Poverty (Masi & Cooper, 2006) identifies several outcomes for children with mental health problems – they struggle more to succeed and have lower
educational achievement, greater involvement with juvenile justice, and unstable placement if involved with child welfare. Children with mental health problems have poorer academic outcomes compared to children with other disabilities (Wagner, 2005; Marder, Wagner, & Sumi, 2003). Consequences appear as early as preschool where children with mental health problems face expulsion rates three times higher than children in grades K-12. Furthermore, children with mental health problems in elementary school are more likely to be absent whereas youth in high school are at risk for dropping out of school (Van Landeghem & Hess, 2005).

Ensuring that students have access and receive school-based mental health services (SBMHS) is important as research shows that when students receive services their functioning improves (Hoagwood, Olin, Kerker, Kratochwill, Crowe & Saka, 2007). Interventions help mitigate negative outcomes such as poor grades, truancy, school violence, substance abuse, suicide, homicide, and ultimately more severe forms of mental illness (Kataoka, Rowan & Hoagwood, 2009; Van Landeghem & Hess, 2005; Masi & Cooper, 2006; Stagman & Cooper, 2010). Left untreated, mental health problems can lead to functional impairment leaving children vulnerable and unable to cope with normal daily stress or navigate through their developmental milestones.

**Mental health and functional impairment**

The method by which functional impairment is defined by our mental health and educational systems often determines eligibility for services under existing federal and state mandates. This creates a gap between those who receive services and those who do not (Burns, Costello, Angold, Tweed, Stangl, Farmer & Erkanli, 1995; Atkins et al., 2006). The risk is that children who do not qualify often fall through the cracks and
deteriorate until they do eventually meet eligibility criteria. This approach costs more money in the long run since children may require longer lengths of service or a higher level of care once they qualify for services (Hodges, Xue & Wotring, 2004; Kutash, Duchnowski & Lynn, 2006).

While 20% of children meet diagnostic criteria for mental illness, 11% of children and youth have significant functional impairment and 5% have extreme functional impairment (U.S. Surgeon General’s Report, 1999, 2000). Risk behavior further adds to the concern as suicide is the third leading cause of death in youth 10-19 years of age; homicide is the fourth leading cause of death for children 5-14 years of age, and the second cause of death for youth 15-19 years of age in the United States (Hoyert et al., 2001). In 2006, for children ages 10-14, 1.3 deaths by suicide occurred for every 100,000 and for adolescents ages 15-19, 8.2 deaths by suicide occurred for every 100,000 (Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, 2009).

**Domains of functional impairment**

Functional impairment impacts children and youth in several areas (Hodges et al., 2004). The degree of impairment is often related to the diagnosis and the severity of symptoms (retrieved from [http://file.lacounty.gov/dmh/cms](http://file.lacounty.gov/dmh/cms))

**Individual domain.** Functional impairment on an individual level can take many forms. If a child suffers from depression for example, he or she may have experience difficulty in the areas of sleep, appetite, concentration and mood regulation (American Psychiatric Association, 2000). This in turn may impact a child’s ability to get out of bed, bathe, and go to school – normal daily activities.
**Family domain.** Functional impairment at home may include family discord, frequent arguments, behavioral outbursts, and social isolation that interfere with a child’s ability to maintain healthy and stable relationships.

**School domain.** Functional impairment at school includes poor grades, absenteeism, expulsion, difficulty getting along with others including teachers, and substance abuse. In addition, if a child or youth has been exposed to trauma or violence at school, this can also have adverse impact on their functioning, specifically on mental health and behavior (Flannery, Wester, & Singer, 2004). Left unaddressed, functional impairment leaves children at risk for school failure and sets the trajectory for poorer outcomes and functioning as adults.

**Community domain.** Functional impairment in this domain includes involvement with multiple service systems including child welfare and juvenile justice. Untreated mental health problems in children and youth can escalate to the point of requiring involvement from external systems such as child protective services due to safety and legal reasons.

Understanding functional impairment is important because society requires children and youth to have the ability to function at home, at school and to be productive contributing members in their communities into adulthood (Hodges et al., 2004). Future success is often perceived as having the functional ability to learn, problem solve, make decisions, be self-sufficient and ultimately independent. Threats to functional capacities such as mental health problems require early detection and intervention. Schools are the best settings given the high number of children and youth who might not otherwise receive mental health services (Armbruster et al., 1997; Atkins et al., 2006). Before
implementing a school-based program, providers must understand important characteristics about the students and their school.

**Student characteristics**

The demographics of students in urban school districts reflect diversity in several areas including gender, ethnicity, language, socioeconomic status, and family composition. It is not uncommon that inner city schools are mainly comprised of underrepresented students including Latinos and African Americans from working class or impoverished families including single female heads of household (Atkins et al., 2006; Evans, 2004). Many students are immigrants or first generation Americans born to immigrant parents. These variables are important because they provide a context to understanding how to best respond to the mental health and educational needs of students (Ringeisen, Henderson & Hoagwood, 2003).

**School characteristics**

School characteristics of urban school districts also broaden the contextual understanding for providers of mental health services including school social workers, guidance, counselors, school psychologists, nurses or community-based clinicians (Agresta, 2004). Schools in low income communities are often over crowded with inadequate resources to meet the mental health and academic needs of children (Armbruster & Lichtman, 1999). Teachers are under pressure to improve student academic outcomes because of funding decisions that impact the school budget (Orthner, Cook, Rose, Roderick & Randolph, 2002; Williams, Horvath, Wei, Van Dorn, & Johnson-Reid, 2007). In addition, the availability of parents or caregivers to meet with teachers may not be possible due to work schedules and teachers in turn may not be able
to make home visits due to their own time constraints. This creates a gap in information that could affect how a teacher perceives and interprets a student’s behavior and their family especially when asked to complete outcome measures used by mental health providers (Esposito, 1999; Williams et al., 2007). Addressing this gap is facilitated by having services available at school and providers who can gather information teachers are unable to obtain.

**Schools are primary providers of mental health services**

Schools have been identified as a significant provider of mental health services for children and youth (Burns et al., 1995). Rones and Hoagwood (2000) report between 70 – 80% of children who receive mental health services receive them in school settings and supports an earlier assertion by Burns et al., (1995) that schools have become the de facto provider of mental health services. In 2002, the President’s New Freedom Commission Report on Mental Health called for schools to play a larger role in the provision of mental health care for children. SBMHS provides several advantages to children and families including the following:

**Stigma is reduced.** When children and families have access to SBMHS, this helps reduce the stigma that families experience when they go to a community mental health center. Schools represent a neutral setting that is familiar to the child and family (Cooper, 2004; Committee on School Health, 2004).

**Access is improved.** SBMHS removes barriers to services such as transportation and allows children and families to receive service they otherwise would not receive (Armbruster et al., 1999). Having easy access increases follow through with therapy
appointments and decreases the risk of terminating services prematurely (Committee on School Health, 2004).

**Cross system collaboration.** Providing mental health services at school allow community-based clinicians to collaborate with teachers and other school personnel for the purposes of coordinating services. Clinicians are afforded the opportunity to observe students in a different environment and one where they spend a lot of time. Collaboration between teachers and mental health providers is critical to achieving successful academic and mental health outcomes (Kutash et al., 2006; Lynn, McKernan, McKay & Atkins, 2003).

**Barriers to school-based mental health services**

Numerous barriers to SBMHS exist in varying forms depending on the schools and their districts. These include but are not limited to inadequate funding, private insurance (e.g., limited coverage), rigid eligibility criteria, shortage of mental health professionals (e.g., bilingual staff), school culture, stigma, and lack of research that addresses both academic and mental health outcomes. In addition, access to students is sometimes limited at school due to core study time which makes it harder to have consistent appointments and impacts dosage if a child is receiving a specific treatment model (Owens and Murphy, 2004). However, funding is the most critical barrier as it determines the availability of services (Burns et al., 1995; Atkins et al., 2003; Hoagwood et al., 2007).

**Barriers to length of stay in outpatient mental health services**

Traditionally, children, youth, and their families have received services at community-based agencies. However, barriers to services are encountered by families
such as a lack of transportation, lack of evening appointments, wait lists, and unavailable childcare (Armbruster and Lichtman, 1999). Stevens, Kelleher, Ward-Estes and Hayes (2006) found that poor attendance in outpatient clinics is related to a family’s perceived relevance of treatment and to the quality of the therapist-family relationship. In addition, Harrison, McKay, & Bannon, Jr. (2004) found that low-income families do not follow-up with care even after being referred for services. Barriers include a lack of social support and parental distress over discipline making it less likely they will keep appointments. Smith, Linnemeyer, Scalise & Hamilton (2013) identified access issues, family discord, and services not meeting expectations as additional barriers to treatment.

**Policy efforts in support of school-based mental health**

Policy efforts in support of mental health are important on the federal, state and local level. The following federal efforts have occurred or are in process:

**President’s New Freedom Commission on Mental Health 2002.** In the commission’s final report in 2003 entitled Achieving the Promise: Transforming Mental Health Care in America, recommendations included promoting the mental health of young children through early detection of mental health problems and improving and expanding school mental health programs. The commission acknowledged the value of such programs in improving educational outcomes.

**Mental Health in Schools Act 2013 and 2015.** On January 16, 2013, in response to the Sandy Hook Elementary School shooting in Connecticut on December 14, 2012, President Obama in his proposed executive orders and legislation on gun control requested that Secretary of Education and then Secretary of Health and Human Services
Kathleen Sebelius start a national dialogue on mental health and young people (Weigel, 2013).

On January 31, 2013, also in response to the Sandy Hook tragedy, Senator Al Franken of Minnesota introduced the Mental Health in Schools Act of 2013 (S. 195) which would increase student access to mental health services in schools and provide training to school personnel on how to identify mental health needs of students. The bill would amend the Public Health Service Act and extend services related to children and violence through school-based comprehensive mental health programs. This expansion would be funded by a grant program distributed by the Substance Abuse and Mental Health Services Administration (SAMHSA) – a branch of the U.S. Department of Health and Human Services – that supports collaboration between school districts and local community based agencies. Congresswoman Grace Napolitano of California (32nd congressional district) also introduced a similar version (H.R. 628) on February 13, 2013 and has been working on passing this bill since 2007. In March 2015, Rep. Napolitano reintroduced the bill as the Mental Health in Schools Act 2015 (H.R. 1211) followed by Sen. Franken in June 2015 (S. 1588). Currently, this bill sits in committee in both the House and the Senate (retrieved from https://www.govtrack.us/congress/bills/114/hr1211# on January 21, 2016).

While tragic events receive media attention and often spur people to action by discussing the need for tighter gun control laws and better mental health services, it is after the fact. The larger issue as it relates to this study is the prevalence of children and youth with diagnosable mental health problems and the inherent consequences that threaten the future of children and youth. At the same time, this problem is an
opportunity for mental health providers, educators, and policy makers to collaborate proactively in pursuit of systemic changes and solutions. In spite of national attention and policy recommendations supporting school-based mental health services (SBMHS) many children and youth in high need areas do not receive services (Kataoka et al., 2002). For example, almost 80% of low income youth in need of mental health services did not receive them within the preceding 12 months after being identified for services (Atkins et al., 2006).

**Every Student Succeeds Act 2015 (formerly No Child Left Behind 2001).** The Every Student Succeeds Act (ESSA) was signed into law on December 10, 2015 by President Obama (Pub. L. 114-95). This law reauthorizes the Elementary and Secondary Education Act of 1965 (ESEA, Pub. L. 89-10) and replaces No Child Left Behind 2001 (NCLB, Pub. L. 107-110) which was a prior reauthorization of ESEA. Embedded in the law and subsequent reauthorizations are provisions for mental health services through various forms of funding streams (e.g., grants). The purpose is to support students at risk for school failure by schools taking proactive steps to address their needs (American Counseling Association, 2011). This law provides states and local education agencies jurisdiction over how this law is implemented (retrieved from http://www.ed.gov/essa on January 22, 2016). While federal grants such as Safe Schools and Healthy Students (SSHS) increase mental health services for some school districts not all students qualify for services. In addition, even though grants are helpful in the short term they are often limited in the scope of services offered and long term sustainability (Kataoka et al., 2002, 2009).

**Lack of outcome research**
Adding to the complexity of this issue is the lack of research that addresses the impact of SBMHS on both mental health and academic outcomes creating a gap that remains understudied and poorly understood (Hoagwood and Erwin, 1997; Hoagwood et al., 2007; Staudt, Cherry, & Watson, 2005). Consequently, making the case for universal mental health screenings, prevention and early intervention services in schools is difficult without outcome data to support these efforts. The result is a fragmented response to a social problem that continues without any long term sustainable solution. In addition, the issue often gets politicized and divided along partisan lines making it more difficult to garner support due to debates about public funded systems such as education and mental health. Often the dominant political party at federal, state, and local levels determines the funding priority given to social issues. As a result, outcomes in mental health and education are seen as separate rather than inter related.

**Relevance to social welfare**

The relevance of this topic to the field of social welfare is based on the prevalence of mental health problems in children and youth (20%) and the fact that 75 – 80% do not receive services (U.S. Surgeon General’s Report, 1999, 2000; Kataoka et al., 2002). This places them at greater risk for functional impairment and negative outcomes including school failure, family discord, and involvement with multiple service systems such as child protective services and juvenile justice (Kataoka et al., 2002, 2009; Masi & Cooper, 2006).

Involvement with other systems such as juvenile justice and child protective services is often linked to risk factors such as early onset of problems, unstable living arrangements, and exposure to violence (Flannery, Wester, & Singer, 2004; Seck, Singer,
& Flannery, 2010). The potential for negative outcomes compel a response by social welfare due to the risk for long term consequences that may include substance abuse and ongoing functional impairment leading to the need for mental health treatment into adulthood.

While cause and effect cannot be established between mental illness and acts of violence, the risk for self-harm and harm to others in children and youth when mental health problems are left untreated cannot be underestimated. Research indicates that early onset of behavior problems starting in preschool are the best predictor of adolescent delinquency and adult incarceration (Dishon, French, & Patterson, 1995). The worst case scenario is realized when untreated mental health problems escalate and result in acts of suicide or homicide (Centers for Disease Control and Prevention, 2013).

**Purpose of the study**

The purpose of this study is to explore the functional impairment of students referred for SBMHS provided by clinicians from a publicly funded community-based agency. Specifically, this study will explore academic predictors of the total score of the Child and Adolescent Functioning Assessment Scale (CAFAS) among students referred for SBMHS in two urban school districts in the Los Angeles area. In addition, the study will explore the characteristics of students referred for SBMHS and the relationship between clinician rated CAFAS scores at the time of program admission and discharge.

This study was designed to provide information that will add to the current knowledge base of SBMH research to strengthen interventions by mental health providers employed by community-based agencies.
The next chapter will explore important issues related to the provision of mental health services in schools and review the status of current theory and research.
CHAPTER 2

Literature Review

In order to set this study in context, it is important to review the mental health background of social work, SBMH research, outcome measures of functioning, federal mandates in special education and mental health, models of SBMHS and theoretical framework for the current study.

Background of school social work and clinical social work

The start of the school social work movement occurred in the northeast region of the United States in 1906 and was recognized as a critical response to social conditions of that time including immigration, the effects of the industrial revolution and the urbanization of American cities (Allen-Meares, 2004). School social workers, known as visiting teachers, worked with families and students, serving as advocates on their behalf. Over time, the growth of mental health needs led to the development of clinical social work which focuses on the treatment of mental health problems in various settings. This focus has at times created internal tension within the field between social workers who define their role as advocates and community organizers and those who have chosen to work as mental health therapists or clinicians.

Over 100 years later, conditions remain unchanged especially in large urban cities posing the same types of challenges encountered by early school social workers. While the face of immigration has changed it remains a social welfare problem along with poverty, unemployment, and under resourced urban school districts. In addition, a new economy has emerged that is built on technology, requiring a different skill set resulting in an outsourcing of jobs in order to meet employment demands. Cities are facing
bankruptcy and a loss of revenue in spite of gentrification movements that aim to bring in wealthier residents while the homeless population continues to grow alongside these efforts. In addition, urban school districts have seen a rise in school violence and the manner in which it is carried out. As a result, schools are encountering mental health needs in their students that require specially trained personnel and comprehensive services. Schools are often unprepared to deal with the continuum of emotional and behavioral needs of students in spite of having school social workers on staff.

In spite of professional tensions within the field, this has not weakened the profession or undermined its values or lessened the role the environment plays in understanding human behavior and social problems. On the contrary, it is because of these attributes that social work continues to be valued as a discipline by other professions. The emphasis on collaboration across service delivery systems such as mental health, education, child welfare and juvenile justice is what makes social workers important team members in large systems such as school districts where opportunities for advocacy exist.

**Special education and mental health**

Specialty services such as special education and mental health are the two most common means in which eligible students can access mental health services at school. Students are required to meet certain eligibility criteria in order to receive services.

**Federal mandates in public education.** Special education is mandated under the Individuals with Disabilities Education Act of 1975 (Pub. L. 94-142) – reauthorized in 2004 – and provides a wide range of services to those that meet eligibility criteria. In order to qualify for special education services under IDEA, there are 13 categories of
eligibility – 1) autism, 2) deaf-blindness, 3) deafness, 4) emotional disturbance, 5) hearing impairment, 6) intellectual disability, 7) multiple disabilities, 8) orthopedic impairment, 9) other health impairment, 10) specific learning disability, 11) speech and language impairment, 12) traumatic brain injury, and 13) visual impairment (Federal Register, 2006). In addition, children aged 3 – 9 who are experiencing developmental delays in one or more of the following areas: 1) physical development, 2) cognitive development, 3) communication development, 4) social or emotional development, and (5) adaptive development, may qualify for special education services (Federal Register, 2006). There are no financial criteria that families must meet in order to qualify for services. Thus, socioeconomic status does not qualify or disqualify a student.

Often there is a lengthy process involved when parents or teachers initiate a request for a special education assessment. If a student is approved for special education, the result is an individualized education program (IEP) that outlines various services or interventions specific to the disability under which the student qualified. Most of the time it is the responsibility of a district employed school psychologist to oversee the evaluation for special education and if applicable, the IEP. Depending on the services needed, services may be provided by district employed personnel or independent contractors.

In the case of emotional disturbance, counseling services known as Designated Instructional Services (DIS Counseling) are often provided by school psychologists, guidance counselors, or school social workers and focus on emotional and behavioral issues that present at school and interfere with a student’s learning and IEP. However, less than 1% of all children are identified as having an emotional disturbance and receive
special education services under IDEA (United States Department of Education, 2001). In California, students with more intense emotional and behavioral needs may qualify for Educationally Related Mental Health Services (ERMHS) where services are more frequent and of longer duration due to functional impairment at school, home, and in the community. School districts are also responsible to provide ERMHS by way of district employed mental health professionals or through contracts with community based mental health agencies or independent contractors.

**Federal mandates in children’s public mental health.** Public funded mental health services are covered under Early and Periodic Screening, Diagnosis, and Treatment (EPSDT) benefit which is the health component of Medicaid or Medi-Cal as it is known in California (retrieved from http://mchb.hrsa.gov/epsdt/ on January 14, 2016). This benefit was introduced by Congress in 1967 as part of the Medicaid program for children and youth (retrieved from https://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Benefits/Early-and-Periodic-Screening-Diagnostic-and-Treatment.html on January 14, 2016). As with special education, there are eligibility requirements that children must meet in order to receive mental health services. As part of the health benefit of Medicaid, EPSDT is based on a medical model that defines medical necessity as having three components – a mental health diagnosis according to the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (American Psychiatric Association, 2000), functional impairment and interventions (retrieved from http://file.lacounty.gov/dmh/cms1_159846.pdf on January 14, 2016). Determination of who is eligible to receive services is made by qualified mental health professionals
including psychiatrists, psychologists, clinical social workers and others approved by Medicaid guidelines.

**School-based mental health research**

Much research has been done on school-based mental health services from the point of view of several professional disciplines including social work, psychology, psychiatry, education, public health and counseling. The fact that so many professions recognize this topic as an important area of study is commendable. These fields recognize the importance of striving for positive outcomes in mental health and education based on the interrelationship between the two.

While the scope of this study focuses on academic predictors of functional impairment due to untreated mental health problems, it is worth describing the interrelationship as follows: untreated mental health conditions can impact academic outcomes and unaddressed educational needs can impact mental health outcomes. Because the lines are sometimes blurred it is not always clear which path of intervention to take – mental health or education? This conundrum therefore supports the need for ongoing research that will help expand our current understanding of SBMHS.

**Focus.** SBMH research has focused on either mental health or academic outcomes but not always at the same time (Kataoka, Rowan, and Hoagwood, 2009; Hoagwood et al., 2007). As would be expected, school personnel are concerned with academic outcomes such as grades, attendance, behavior in the classroom, and graduation rates since funding is tied to the ability to demonstrate positive outcomes in these areas. Mental health providers are focused on safety, stability, and symptom reduction tied to funding criteria (e.g., ability to bill for services under Medicaid) based on diagnosis and
level of functional impairment. In addition, providers are interested in student demographics, caregiver information, school/school district characteristics, teacher perceptions of student functioning and outcome measures.

**Limitations.** The limitations of SBMH research are related to sample size, lack of a control group, barriers to data collection and analysis, lack of infrastructure for schools and agencies to do their own research, regional differences, demographics, and funding (Burns et al., 1995; Hoagwood et al., 1997; Hoagwood et al., 2007; Ringeisen et al., 2003; Rones et al., 2000). Many of these limitations make it difficult to generalize the findings to a larger population.

At the same time, caution must be exercised when analyzing data from low income schools with high minority populations so as not to make attributions that cannot be supported by research. Premature conclusions could result in the perpetuation of stereotypes. For example, school referrals for SBMHS will reflect the population of the school and community and do not mean that certain minority populations have more mental health problems compared to other groups. Understanding the sociopolitical context of schools, communities, and the history is important for providers to demonstrate to those they serve.

**Challenges.** Inherent with the need for more research is the challenge of pursuing this endeavor in naturalistic or real world settings such as schools. Teachers and other personnel are overwhelmed with their own work which may impact the use of outcome measures and data collection form school employees resulting in missing data. Specific outcome measures may pose a challenge given the population that is being studied and/or
the intervention that is being used by the mental health provider (e.g., appropriateness of the outcome measure).

Other challenges related to data collection may include rater bias and the culture of the school (e.g., value placed on research). For example, Stormark, Heirvang, Heimann, Lundervold & Gillberg (2008) found that teachers rated children higher on mental health screens when parents did not consent for participation. Cullinan and Kauffman (2005) emphasize the need to study whether the race of students and teachers influence teacher ratings of emotional and behavioral problems.

Lastly, issues of confidentiality may also create challenges between providers, schools, and families. Concerns about how the data will be used and who will see it are not uncommon. This is often influenced by level of trust or mistrust between schools and families.

**Gaps.** SBMH research allows for gaps to be identified and methodologies strengthened. The focus of SBMH research has favored program and intervention development (Kataoka, Rowan, & Hoagwood, 2009). Though this information is helpful to study, a new framework is needed that evaluates other relevant areas such as the relationship between academic factors – school characteristics, teacher ratings and other context variables – and school functioning. Gaps inform future research by building on what has been studied up to now.

**Measures of functional impairment in children and youth**

There are different measurement tools used to assess functional impairment in children and youth. This next section will review three widely used measures in children’s mental health.
Children’s Global Assessment Scale (CGAS). The CGAS was adapted from the Global Assessment Scale for adults (Shaffer, Gould, Brasic, Ambrosini, Fisher, Bird & Aluwahlia, 1983). It was designed to measure the lowest level of functioning for children and youth (ages 4 – 16) during a specific time period of one month. The scale ranges from 1 (most impaired; needs constant supervision) to 100 (healthiest; superior functioning). Scores above 70 are considered within the normal range of functioning. The scale contains behavioral descriptors for each decile that specify behaviors and life situations.

Global Assessment of Functioning Scale (GAF). The GAF is Axis V of the Diagnostic and Statistical Manual of Mental Disorders Fourth Edition Text Revision (DSM IV-TR); developed by the American Psychiatric Association (2000) that uses a multiaxial system for diagnosing mental disorders. As with the CGAS, it is a scale that ranges from 1 to 100 with descriptions for each decile. The GAF measures both symptoms and functioning. The higher the score the less symptoms and functional impairment are present. The time period chosen for the assessment of functioning is determined independent of the measure (e.g., agency policy).

Child and Adolescent Functioning Assessment Scale (CAFAS). The CAFAS was developed in 1989 by Kay Hodges, Ph.D. and assesses the degree of impairment in children and youth with emotional, behavioral, psychiatric, or substance use problems (Hodges, 2003b). The CAFAS is a clinician rated scale and was designed to be more objective, comprehensive and sensitive to change over time. Level of functional impairment is determined by the highest score of problematic behaviors across five life domains. These include 1) role performance, 2) behavior toward others, 3) moods/self-
harm, 4) substance use, and 5) thinking (Hodges, 1994). The scale produces five subscale scores and a total overall functioning score. Each of the domains has a set of behavioral descriptors which are grouped into levels of impairment with an assigned numerical value – 30 (severe impairment), 20 (moderate impairment), 10 (mild impairment) and 0 (no impairment). The range based on the total score is 0 – 150 with higher scores indicating greater functional impairment.

Several studies have used the total CAFAS score to evaluate overall functioning using the 5 subscale CAFAS (Hodges and Wong, 1996; Hodges and Wong, 1997; Hodges, Wong & Latessa, 1998; Hodges, Doucette-Gates & Liao, 1999; Walrath, Sharp, Zuber & Leaf, 2001; Walrath, Miech, Liao, Holden, De Carolis, Santiago, & Leaf, 2001). Following this line of research, in this study, only the total score was used. The individual subscale scores were not available in the data set.

**Summary of psychometric properties.**

There is much debate on the reliability and validity of subjective measures of functioning due to differences in training, educational background and experience of the rater (Shaffer et al., 1983). In addition, the use of a multidimensional scales compared to a unidimensional scale has also been part of the discourse in mental health circles.

CGAS – Shaffer et al., (1983) studied the CGAS and found that it can be useful in measuring severity of disturbance, is reliable between raters and across time. The study utilized case histories which were rated by second-year psychiatry fellows. The intraclass correlation coefficient was .84, suggesting excellent agreement beyond chance. The exercise was repeated 6 months later and the intraclass correlation coefficient was .73. The measure also demonstrated discriminant validity when comparing children treated
outpatient (n = 19) and inpatient (n = 29, rated by ward psychiatrists). The mean CGAS score for the children receiving outpatient treatment was 65.4 (SD = 14.8) and for the inpatient children, 46.0 (SD = 19.0). The difference in results was significant at the .001 level. Concurrent validity was assessed by comparing CGAS scores on the outpatient children (n = 19) with ratings by parents on the Conners ten-item abbreviated Parent Checklist (used to assess behaviors of hyperactivity). All of the children were boys diagnosed with attention deficit disorder with hyperactivity. The modest correlation between both measures was -0.25 (p > .05, df = 17).

The limitations include a lack of information on sensitivity to change; the measure is subjective; the comparison of two measures lack direct comparability (e.g., CGAS and Conners); the small number of case histories and raters; and the diagnostic differences between the outpatient and inpatient children. These limitations impact how much the results can be generalized to a wider population and therefore, require further research to address these issues. Strengths include the introduction of a measure for use with children; using descriptors that are specific to child functioning; and its usefulness as a supplement to the assessment process.

**CGAS and GAF.** Rey, Starling, Wever, Dossetor & Plapp (1995) assessed interrater reliability using four studies and found moderate reliability (ICC) with a range of 0.53 – 0.66. Study one/group one utilized Axis V (GAF) on a sample of outpatient children and rated the highest level of functioning in the past year. Study two/group two also utilized Axis V (GAF) on a different sample of children receiving inpatient treatment. They were rated on current level of functioning. Study three/group three utilized the CGAS on a different sample of outpatient children and rated the highest level
of functioning in the past year. Study four/group four also utilized the CGAS on a
different sample of children receiving inpatient treatment and rated the current level of
functioning. The raters consisted of twenty experienced clinicians including child
psychiatrists, clinical psychologists and social workers similar to what would be found in
a university affiliated child and adolescent psychiatric setting.

As noted, the results indicated moderate reliability. While the agreement was
higher than expected by Rey et al., (1995), the results were low compared to the 0.84
findings by Shaffer et al., (1983). No significant differences were found on rater
agreement among Axis V (GAF) and the CGAS or on current or past ratings of
functioning.

The limitations include the extent one can generalize the results of the study; the
diversity of the raters in terms of education and training (e.g., influence on ratings and
outcomes); the subjectivity aspect of the measures and the differences between the two
(e.g., CGAS is more global and Axis V (GAF) is more descriptive and includes
symptoms and behaviors; sensitivity to change was not addressed for each measure; and
the location of the study was outside the United States (Australia). The strengths of the
study include the use of live participants compared to case histories; the professional
diversity of the raters and the clinical setting supports real world practice; the study
included both outpatient and inpatient children; and the study focused on the two most
widely used measures of functional impairment at that time which are still relevant to
current practice and research.

In reviews by Aas (2010; 2011); Schorre and Vandvik (2004), there is agreement
that the use of global assessments of functioning is an important element of assessments
in clinical practice and research. Both the CGAS and Axis V of the DSM IV-TR (GAF) are measures highlighted in the reviews. Their findings included the results found by Shaffer et al., (1983) and Rey et al., (1995). The reliability of CGAS and GAF varied from fair to substantial and depended on the raters, their training, and the diagnostic groups.

Aas (2011) highlighted the need for rating guidelines due to the subjective element of the measures and the lack of research in this area. This would address concerns about reliability and validity of the GAF. The review consisted of 105 publications including original research papers, books, articles and book reviews. Seven categories were identified that require further research – 1) General points about guidelines for rating GAF; 2) Introduction to guidelines, with ground rules; 3) Starting scoring at the top, middle or bottom level of the scale; 4) Scoring for different time periods and of different values; 5) The finer grading of the scale; 6) Different guidelines for different conditions; and 7) Different languages and cultures. Further research in these areas would strengthen current GAF guidelines by making them more comprehensive.

The limitation of this review is the lack of discussion paid to how the GAF is used for both adults and children and the challenges this creates. The strengths include the areas identified for further research that will clarify how to appropriately use the measure with adults and children.

Properties (characteristics and attributes) of the GAF were explored by Aas (2011) in a review of 96 publications. The purpose was to identify knowledge gaps about the current properties of the GAF since the measure has undergone limited changes during its history. Four areas were identified for further research – 1) Scaling; 2) Anchor
points of the GAF; 3) Scoring within 10-point intervals; and 4) Number of scales. Given that the current GAF is a continuous scale, Aas (2011) raises the question about the value of a categorical scale. In addition, he discusses the possible benefit of updating current anchor points (e.g., key words and examples) or changing the number of anchor points to improve GAF ratings. He further questions if better instructions for scoring would improve ratings. Lastly, he questions if there is any benefit to having dual scales for the GAF – one for symptoms (GAF – S) and one for functioning (GAF – F) as exists internationally.

The limitation of the review is that the studies focused on the use of the GAF with adults only and limits the author’s conclusions and recommendations. The strengths include the author’s call for a review of the GAF to determine if changes are needed, based on future research. This is critical given the number of DSM revisions thus far and should be addressed if the GAF remains part of the DSM.

Schorre and Vandvik (2004) examine the usefulness of global assessments of psychosocial functioning including the CGAS and GAF. Their review was based on 69 CGAS articles and 33 GAF articles that focused on children. The CGAS is older than the GAF and is the most studied of the two scales. Study designs and quality differed across the articles. The authors acknowledge the absence of a “gold standard” for global assessment functioning scales and how this poses a challenge in assessing psychometric properties. The CGAS articles demonstrated how the measure was used with different populations; as an outcome measure; to test inter rater reliability; and to quantify severity of the problem. In addition, since the GAF is used for both adults and children and has no age range as compared to the CGAS (ages 4 – 16); the authors question the impact on
scoring. The descriptors for each decile are for adults and children and include both symptoms and functioning.

The limitations are the number of CGAS articles compared to the GAF – the latter has been studied less. Also the articles cover a variety of areas related to these measures rather than focusing on one area. This limits the conclusions that can be made. The strength is that this review focused on the use of these measures with children and youth. Lastly, the authors suggest international consensus for one measure would improve reliability and facilitate research across countries.

CAFAS. The CAFAS is a multidimensional measure compared to the CGAS and GAF which are both unidimensional. Developed in 1989 by Hodges (2003b), the measure is supported by 20 years of research including 80 published articles.

Studies show that the CAFAS has satisfactory interrater reliability and internal consistency (Hodges and Wong, 1997). In addition, the measure has satisfactory test-retest reliability (Hodges & Gust, 1995). Sensitivity to change over time has been documented by Hodges & Wong (1997); Hodges, Wong & Latessa (1998) using a large evaluation study conducted at Fort Bragg. A reduction in impairment was seen from intake to 6 and 12 months. Another evaluation focused on an intensive school-based mental health program and noted significant pre to post differences with large to moderate effect sizes (Vernberg, Jacobs, Nyre, Puddy & Roberts, 2004). Further studies show that the CAFAS can differentiate between children and youth served by different levels of care (e.g., outpatient versus inpatient) (Hodges and Wong, 1997); youths in various living arrangements (Hodges, Doucette-Gates & Liao, 1999); youths with
different levels of severity related to psychiatric diagnoses (Hodges, Doucette-Gates & Liao, 1999); youths with multiple psychiatric diagnoses (Hodges and Wong, 1996).

Higher CAFAS (indicating lower levels of functioning) scores have been associated with social relationship problems (Hodges & Wong, 1996); involvement with juvenile justice (Hodges, Doucette-Gates & Liao, 1999), school problems (Hodges, Doucette-Gates & Liao, 1999; Hodges & Wong, 1996), and risk factors in children and families (Manteuffel, Stephens & Sontaigo, 2002; Walrath, Sharp, Zuber & Leaf, 2001).

In terms of predictive validity, CAFAS scores predicted future episodes of treatment, (Hodges & Kim, 2000); treatment costs (Hodges & Wong, 1997); future contacts with law enforcement and school attendance (Hodges & Kim, 2000) and recidivism for youth in juvenile justice residential centers (Quist & Matshasi, 2000).

In contrast, Bates (2001) raised several concerns related to CAFAS in a detailed review of the measure. His review was done within the context of psychometric properties, validity for use with target population, ease of use, and utility.

**Psychometric properties.** Under internal consistency reliability, Bates questions Hodges (1997) claim that the internal consistency coefficient (Cronbach’s alpha) values ranging from 0.63 to 0.68 based on the Fort Bragg study and cited by Hodges and Wong in their article (1996) are relatively low. In addition, he questions the procedures for completing the scale. As for interrater reliability, Bates (2001) acknowledges this has been well documented and concedes the evidence provides moderate support. However, he questioned the method due to the reliability coefficients being based on groupings and not on individually rated items and recommends this for future research.
In terms of stability of scores, Bates accepted the findings of Hodges and Wong (1995) who examined test-retest reliability and found a Pearson product-moment correlation coefficient for two Total Scores of 0.95. As for content and structural validity, up to the date of his article (2001), Bates did not find any published information regarding content and structural validity. As a result, he raised concerns over how items were selected for the CAFAS. Also, because global functioning and the subscale domains were not operationalized, Bates (2001) questioned whether the items are sufficient. In terms of concurrent validity, he accepted the results of Hodges (1997) who compared the total scores of the CAFAS with the CGAS scores from the Fort Bragg study and found significant agreement. Regarding criterion-related validity, Bates (2001) did not express concerns about the study by Hodges and Wong (1997) and accepted the results that showed the CAFAS can be used as a measure across multiple fields of functioning. As for predictive validity, Bates (2001) acknowledged that the study by Hodges and Wong (1997), demonstrated that the CAFAS total score significantly predicted service utilization and cost.

**Validity for use with target population.** The CAFAS was designed for use with children and youth dealing with emotional and behavioral problems and classified as severely emotionally disturbed (SED). Data was collected from the Fort Bragg study which compared a continuum of care with traditional outpatient treatment for SED children and youth. Face validity is present based on the design of the CAFAS and what SED children and youth struggle with in terms of functional impairment.

**Ease of use.** Bates (2001) cites a small (more than half of 18 respondents) survey that indicated some level of “burden” associated with using the CAFAS. This contradicts
Hodges (1997) who reported that the CAFAS takes approximately ten minutes to complete based on familiarity with the child or youth’s behavior and functioning.

**Utility.** Bates (2001) acknowledges the clinical utility of the CAFAS in his review. He states that the total score provides a “meaningful” metric in spite of his concerns. In addition, he cites the widespread use of the CAFAS on both state and local levels as demonstrating the utility of the measure.

**Summary of review.** The strengths of this review by Bates (2001) is that he raises several valid questions about the CAFAS including its internal consistency reliability and content and structural validity. At the same time, he acknowledges the evidence that supports other psychometric properties of the CAFAS.

The limitations of this review include the following: 1) Bates offers no viable alternative in lieu of the CAFAS that has been studied as much if not more; 2) Some of his concerns are based on small sample sizes such as the survey he cited under Ease of Use, where he provides no information on who the raters were, their background, or level of experience, all of which could have influenced their perception of “burden” in using the CAFAS; 3) his recommendations for future research on the CAFAS instrument have already been addressed by the developer (e.g., concurrent validity).

**Models of school-based mental health services (SBMHS)**

There are several models for providing SBMHS. The following section will review three models, their approaches, strengths and limitations:

**School Staff Model:**

This model uses district employed staff such as school social workers, school psychologists, school counselors, school nurses and clinicians from a school health center
to provide mental health services (Adelman & Taylor, 2006; Agresta 2004). Services may include those authorized under special education (e.g., IEPs), behavior management, crisis intervention, prevention services, or those offered as part of a health education curriculum. Schools utilize various service delivery approaches such as Public Health (PH) and Positive Behavioral Interventions and Supports (PBIS) (Hoagwood & Johnson, 2003; Kutash et al., 2006; Weist, 1997; Weist, 2005).

**Public health.** Providing SBMHS from a public health approach allows for the full continuum of services to be provided based on the level of need that a student presents with. There are three levels to the public health model and include 1) Universal preventive interventions, 2) Selective preventive interventions, and 3) Indicated preventive interventions as proposed by the Institute of Medicine (Mrazek & Haggerty, 1994).

Universal prevention interventions are implemented school wide before any symptoms manifest indicating a need for mental health services. Interventions can be incorporated into classroom curriculum with the intent of promoting mental health awareness such as social skill building. Selective preventive interventions are targeted to children that may be at-risk for developing mental health problems due to family history or environmental factors. Such children might receive group services as a means of preventing the onset of problems by providing an outlet to learn how to deal with stressful feelings for example. Indicated prevention interventions focus on students who are exhibiting specific symptoms indicating a high risk for developing a mental health problem. There have been different variations to this paradigm and there is no universal
agreement but these definitions have been useful in guiding the field of SBMHS (Kutash et al., 2006).

**Positive behavioral interventions and supports.** Similar to public health is another approach called Positive Behavioral Interventions and Supports (PBIS). It operates through the Department of Education’s Office of Special Education Programs (OSEP). PBIS is a multi-tiered prevention-based framework that is offered school-wide and includes universal screenings and builds upon organizational supports within schools.

The strengths of the school staff model include everyone having the same employer; a shared mission; staff understand school culture as they are part of it; all are working towards the same academic outcomes; opportunities for collaboration are easier to facilitate through frequent contact; and office space is priority for district employed staff.

The limitations of this model include large caseloads; wait lists for special education assessments; lack of mental health training; turf wars between staff due to unclear roles and responsibilities; funding allocations for key positions; split schedules across several schools versus working at one school; shared office space, severity levels of students with mental health problems may require an outside referral; and work schedules may prevent or limit parent/caregiver participation in services.

**Community-based agency staff model.** Due to the eligibility restrictions of special education under IDEA, many school districts partner with local community-based agencies for mental health services. Commonly, agencies and school districts will sign a memorandum of understanding (MOU) that outlines the roles and responsibilities of each entity in the provision of SBMHS. Schools are mainly responsible for providing a
confidential space and referrals while agencies provide their funding (e.g., Medi-caid and/or grants) and personnel such as master level therapists. The approach to service delivery and types of services provided are dictated by the funding source. For example, if Medicaid funding is used, children must meet medical necessity criteria as defined by having a DSM IV-TR (American Psychiatric Association, 2000) diagnosis, functional impairment, and interventions (retrieved from http://file.lacounty.gov/dmh/cms on January 14, 2016).

The strengths of the community-based agency staff model include staff who is trained in specialty mental health services – beyond prevention and early intervention programs; the skill to provide services to children with severe mental health problems at school; roles and responsibilities are clear; flexible schedules are offered to accommodate family therapy including home visits after school; agency staff provide services under agency funding which relieves the financial burden for school districts; some agencies offer comprehensive mental health services such as psychiatry and higher levels of outpatient care based on need; families may feel more comfortable receiving services from a clinician not employed by the school district due to issues of confidentiality and trust.

The limitations of this model include the potential for culture clash such as turf wars between school personnel and agency personnel; unmanaged expectations on issues regarding confidentiality and exchange of information; clinician caseloads; wait lists for counseling; split schedules (e.g. clinician works at more than one school); lack of confidential office space; eligibility criteria based on funding (e.g., limits who can
receive services); and ethical dilemmas based on professional values (e.g., advocacy on behalf of clients may conflict with school expectations).

**Integrated model.** A new model was developed and proposed by Eber, Weist, & Barrett (2013) called the Interconnected Systems Framework (ISF). Building on the foundation of PBIS and Implementation Science, ISF integrates school mental health services and resources with education. This ensures greater quality of prevention and intervention strategies resulting in better outcomes for students receiving services. This framework is a shared process across multiple systems including school, family, and community. ISF blends mental health and education into a multi-tiered approach for greater efficiency and effectiveness (Eber, Weist, & Barrett, 2013).

The developers propose that ISF addresses the gaps often found in PBIS at Tier II and Tier III resulting in unaddressed behavioral and emotional needs of students with more severe mental health needs. This is accomplished by teams that include community mental health providers, decision making based on data, implementation of evidence-based practices, early screenings, close monitoring of treatment progress and ongoing coaching support at practice and system levels.

The strengths of the Interconnected Systems Framework include the integration of mental health and education into a joint effort that addresses both types of outcomes. This approach has been lacking as noted in previous research by Hoagwood et al., (1997). ISF acknowledges the interrelationship between mental health and education and addresses the current fragmented service delivery system.

The limitations of ISF include the lack of a national policy that mandates this integration across all public school districts. Without a national agenda to hold systems
accountable, the sustainability of this initiative is questionable. Another limitation is funding for services under this model; outside of current funding streams such as special education and Medicaid. If the goal is to bridge the gap so that all students benefit from ISF, this will require a different funding strategy for national implementation. The benefit of having different models of SBMHS is that it allows for flexibility in choosing the one that best fits the needs of students.

Theoretical context of the current study

Functional impairment as measured by the CAFAS is best understood within the theoretical context of Bronfenbrenner’s (1979) ecological model. His conceptualization of interconnected systems, through the use of concentric circles, provides a visual that aptly depicts the life domains of functioning. For example, his terms microsystem, mesosystem and macrosystem provide a structure to understand the construct of functioning within multiple contexts beginning with the individual child (microsystem), family (mesosystem), and school/community (macrosystem). This theoretical model challenges the perception that functional impairment occurs in silos. On the contrary, higher CAFAS scores have been associated with functioning in multiple domains: relationship problems, school problems, involvement with juvenile justice (Hodges & Wong, 1996) and risk factors (e.g., low income, single parent household) for children and families (Manteuffel et al., 2002; Walrath et al., 2001). In addition, CAFAS scores have predicted future episodes of treatment, (Hodges, Doucette-Gates & Kim, 2000); treatment costs (Hodges & Wong, 1997; Doucette, Hodges & Liao, 1998); future contacts with law enforcement and school attendance (Hodges & Kim, 2000) and recidivism for youth in juvenile justice residential centers (Quist & Matshazi, 2000).
Using Bronfenbrenner’s (1979) ecological model provides a theoretical framework that is helpful in developing appropriate levels of intervention needed in school-based mental health programs. His model complements the multi-tiered levels of intervention found in public health, Positive Behavioral Interventions and Supports (PBIS), and the Interconnected Systems Framework. Understanding functional impairment from an ecological framework is important. For example, a child may be exposed to trauma or violence at home resulting in a report to child protective services. Depending on the outcome of the investigation, a child may be removed from their family and placed in foster care for safety reasons. If the child is able to remain at the same school, it can be anticipated that the teacher will observe changes in the child’s individual functioning as a result of the disruption in family functioning. Over time, it is probable that there will be changes in the child’s school and community functioning which reflects the interrelationship of functional impairment across all domains.

Building on the work of Bronfenbrenner (1979), Cicchetti and Lynch (1993) proposed their ecological-transactional model as a means of explaining the influence of child maltreatment and community violence on a child’s development and adaptation. However, their model is applicable to a broader study of child development and conditions of psychopathology and is therefore included as a relevant theoretical framework within which to understand the mental health needs of children and youth.

Specifically, the model consists of nested levels with varying degrees of proximity to the individual. The macrosystem includes the cultural beliefs and values within a family and society. The exosystem refers to the neighborhood and community settings in which children and families reside. The microsystem includes the family
environment that children and adults mutually create and experience. The ontogenic level refers to the individual and his or her own developmental adaptation. This last level demonstrates the belief that individuals are important parts of their own environment.

The underlying premise to this model is the belief that the levels of environment interact and transact with each other over time and shape an individual’s development and adaptation. The context of each level and a child’s functioning mutually influence each other and the transactions that occur between children and their contexts allows for continuity in development.
Figure 1. Domains of functioning using Bronfenbrenner’s Ecological Model

Figure 1 visualizes the systemic levels that represent domains of functioning – individual, family, school and community. It is important to assess the degree of functional impairment within each domain and the interrelationship across domains. An individual child functions within the context of family and functions within the larger context of school and community. Given that Bronfenbrenner (1979) has multiple levels, the current study incorporates the CAFAS total score to determine functional impairment at the school level. Figure 2 represents the conceptual model for the current study and shows the relationship between the variables. In this model, CAFAS scores are predicted by a number of variables including student characteristics, school characteristics, teacher ratings of classroom functioning, and school-based mental health services characteristics.
Research questions for the current study

Research question 1 (RQ1). What are the characteristics of students referred for SBMHS?

This question is important given the prevalence of children and youth with mental health problems and because schools have been called the primary provider of mental health services (Burns, 1995; Hoagwood et al., 2007).
Research question 2 (RQ2). What is the level of functional impairment of students referred for SBMHS as measured by the clinician rated baseline CAFAS scores and discharge CAFAS scores?

Functional impairment is one of the eligibility requirements that must be met in order to receive mental health services under the Medicaid program known as Medi-cal in California (retrieved from http://file.lacounty.gov/dmh/cms1_159846.pdf on January 14, 2016). This variable is important to the current study because children living in low income communities rely on Medicaid for their healthcare needs including mental health.

Research question 3 (RQ3). Controlling for clinician rated baseline (admission) CAFAS scores, to what extent are school district, length of enrollment, teacher rated frequency of student emotional upset at enrollment associated with clinician rated discharge CAFAS scores?

School characteristics, length of enrollment, and teacher perceptions and ratings of student behavior are important variables to this study because of their impact on student functioning (Hussey and Guo, 2003). Vitaro, Tremblay & Gagnon (1995) found that teacher’s management style may bias assessments of student behavior; Mason, Gunersel, & Ney (2014) found evidence of teacher bias due to teacher culture; and Wehby, Lane & Falk (2003) found a lack of research on the academic needs of children with emotional and behavioral disorders (EBDs). The concern for Wehby et al., (2003) is that behaviors receive attention rather than the learning needs of children with EBDs based on the assumption that learning cannot take place until behaviors are under control.

Hypotheses for the current study
**Hypothesis 1 (H1).** Longer length of enrollment in SBMHS will be associated with lower discharge clinician rated CAFAS total score (e.g., lower scores mean lower level of impairment).

Rationale – Students who meet eligibility criteria for mental health services under special education or Medicaid guidelines (e.g., diagnosis and functional impairment), often benefit from longer enrollment in SBMHS (Burns et al., 1995; Atkins et al., 2003; Kataoka et al., 2002). This increases the potential for lower CAFAS total scores.

**Hypothesis 2 (H2).** Teacher rated student aggression will be associated with higher discharge clinician rated CAFAS total score (e.g., higher scores mean higher level of impairment).

Rationale – Teacher ratings of student behavior such as aggression may be rated higher in order to justify mental health services. Clinician rated discharge CAFAS total scores may be higher (e.g., higher scores mean higher functional impairment) due to unplanned or premature discharge. Lower income students often drop out of services due to barriers such as transportation, moving to another city and switching schools (American Academy of Pediatrics - Policy Statement Committee on School Health, 2004; Cooper, 2004; Kataoka et al., 2002).

**Hypothesis 3 (H3).** Teacher rated student threatening behavior will be associated with higher discharge clinician rated CAFAS total score (e.g., higher scores mean higher level of impairment).

Rationale – Similar to (H2), teacher ratings of threatening behavior may be rated higher in order to justify mental health services. Clinician rated discharge CAFAS total scores may remain high (e.g., higher scores mean higher functional impairment) due to
premature termination from services. Barriers to treatment are often encountered by low income students such as schedules and access to services (Committee on School Health, 2004; Cooper, 2004; Kataoka et al., 2002).

**Hypothesis 4 (H4).** Teacher rated student emotional upset will be associated with higher clinician rated discharge CAFAS total score (e.g., higher scores mean higher level of impairment).

Rationale – Mood dysregulation can be indicative of a higher level of impairment that manifests in higher CAFAS scores at discharge. This may suggest the need for a higher level of care or an intensive program (Hodges, 2003b).

**Hypothesis 5 (H5).** Teacher rated overall student functioning will be associated with higher clinician rated discharge CAFAS total score (e.g., higher scores mean higher level of impairment). Rationale - Overall student functioning may influence teacher perception and ratings resulting in higher discharge CAFAS scores (Abidin & Robinson, 2002). In addition, higher clinician rated discharge CAFAS scores may suggest the need for a higher level of care (Hodges, 2003b).
CHAPTER 3

Method

This was a descriptive study of the characteristics of students referred for SBMHS and their associated level of functioning as measured by the Child and Adolescent Functioning Assessment Scale (CAFAS). In addition, relationships between key variables were explored as well as variables that can be used to predict CAFAS outcomes.

SBMHS were delivered in two suburban school districts located less than twenty (30) miles from downtown Los Angeles, California with similar characteristics to both the city and county of Los Angeles. The close proximity to Los Angeles allows for a strong urban influence on neighboring communities. The data to be analyzed comes from a secondary data set obtained from 144 closed files belonging to children/youth that received school-based mental health services and were discharged during the years 2004 – 2008.

Service delivery setting

SBMHS were provided by master level clinicians employed by a community-based agency called Five Acres. The main office is located in Altadena, CA, a distance of 17 miles from downtown Los Angeles, CA. Five Acres is a large child and family agency with approximately 400 employees. The agency was originally founded in 1888 as an orphanage for children. Today, Five Acres offers comprehensive mental health services through a variety of settings and programs that include community-based/school-based, family preservation, deaf services, therapeutic behavioral services, foster care, a residential treatment center, two group homes, and a therapeutic day school. Five Acres is funded by the Los Angeles County Department of Mental Health, Los Angeles County
Department of Children and Family Services, and private grants and donations. The agency is authorized to provide SBMHS to students with Medi-Cal (Medicaid) insurance as long as they meet medical necessity criteria defined by an AXIS I diagnosis found in the Diagnostic and Statistical Manual of Mental Health Disorders, Fourth Edition, Text Revised (DSM IV-TR) (American Psychiatric Association, 2000).

The school districts in this study were local to Five Acres and have partnered with the agency since 1999 in offering SBMHS to students. In addition, descriptive information on Los Angeles County schools and community characteristics of the school districts were obtained to provide further context in which service delivery occurred.

**Pasadena Unified School District characteristics.** According to the California Department of Education (Ed-Data, 2009), general information about the Pasadena Unified School District (PUSD) for school year 2007 – 08 included an overall student enrollment of 20,905 for grades kindergarten through 12 (twelve) across 32 schools. Elementary school enrollment consisted of 11,357 students (22 schools), middle school 1,972 (3 schools), high school 7,093 (6 schools), continuation 260 (1 school), and nonpublic 223 (0 schools). SDA had 4 (four) charter schools with an enrollment of 407 students during school year 2007-08. The ethnicity breakdown for students reflected 49 (0.2%) American Indian, 591 (2.8%) Asian, 60 (0.3%) Pacific Islander, 314 (1.5%) Filipino, 11,642 (55.7%) Hispanic, 4,690 (22.4%) African American, 3,490 (16.7%) White, 69 (0.3%) Multiple/No Response. English learners comprised 4,275 (20.4%) students whose primary language was not English. The number of students who qualified for Free and Reduced Price Meals was 11,445 or (54.7%) of the total student enrollment. Compensatory education students numbered 9,854 (47.1%).
Monrovia Unified School District characteristics. Characteristics for Monrovia Unified School District (MUSD) were obtained from the California Department of Education for school year 2007 – 08. Overall student enrollment was 6,192 for grades kindergarten through 12 (twelve) across 10 schools. Elementary school enrollment consisted of 2,684 students (5 schools), middle school 1,394 (2 schools), high school 1,883 (1 school), K-12, 129 (1 school), continuation, 91 (1 school), and nonpublic, 11 (0 schools). MUSD did not have any charter schools during school year 2007 – 08. The ethnicity breakdown for students reflected 47 (0.8%) American Indian, 182 (2.9%) Asian, 26 (0.4%) Pacific Islander, 149 (2.4%) Filipino, 3,330 (53.8%) Hispanic, 597 (9.6%) African American, 1,615 (26.1%), White, 246 (4.0%) Multiple/No Response. English learners comprised 957 (15.5%) students whose primary language was not English. The number of students who qualified for Free and Reduced Price Meals was 3,285 (53.1%). Compensatory education students numbered 2,775 (44.8%).

The ethnicity breakdown for students was 4,646 (0.3%) American Indian, 126,370 (7.7%) Asian, 7,638 (0.5%) Pacific Islander, 38, 363 (2.3%) Filipino, 1,028,297 (62.4%) Hispanic, 158,951 (9.6%) African American, 253,729 (15.4%) White, 30,108 (1.8%) Multiple/No Response. English learners comprised 473,003 (28.7%) whose primary language is not English. Students that qualified for Free and Reduced Price Meals totaled 963,132 (58.4%). Compensatory education students numbered 1,146,882 (69.6%).
Figure 3. Location of Pasadena and Monrovia in the county of Los Angeles.
Participants

The sample for this descriptive study was comprised of 144 students across all grade levels from two public school districts referred for SBMHS and were discharged during the years 2004–2008.

Institutional Review Board

In accordance with university protocols, an application was submitted to the Institutional Review Board (IRB) on behalf of this study with a request for exemption under the Code of Federal Regulations (CFR) Title 45 Part 46 Section 46.101 b(4). The exemption is based on the use of a secondary de-identified data set.

Instrumentation and study variables

Data collection procedures and measures. Prior to the start of SBMHS, a student’s parent or legal guardian was required to sign a consent for services giving permission for the minor to receive services at the first appointment with the assigned therapist. During the first appointment, a psychosocial assessment was started and/or completed in accordance with funding requirements. The clinician was required to complete the psychosocial assessment within 30 days in accordance with agency policy.

Data were collected by therapists for each student using three (3) data collection forms: Clinician Baseline Form, Teacher/Counselor Form, and Discharge Form. The forms were developed by a small workgroup from local agencies, including Five Acres, for use in their school-based programs. All data collection for this study was overseen by the research department at Five Acres.

The Clinician Baseline Form was completed by the clinician within the first 30 days of admission. Data collected included who completed the form, the date the form
was completed, student’s name, date of birth, date of referral, date of admission, and agency identification number. In addition, background information was collected on ethnicity, primary caregiver, primary language spoken at home and gender. Referral information was also collected on referral source, educational status such as involvement with special education at time of referral, prior mental health services, other system involvement at time of referral such as child protective services and probation, medication status at time of referral, and total CAFAS score. Lastly, funding information was collected (see Appendix A for clinician baseline form).

The Teacher/Counselor Form was completed within the first 30 days of admission. Data collected included the date of referral, date of admission, agency identification number, and date of birth. Additional information included teacher’s name, student’s name; name of school, grade, and the date form was completed. A section of the form asks for information on behavior of the student during the last month and asks if the student was removed from class, physically aggressive at school, threatening or intimidating at school, and/or emotionally distraught or withdrawn at school. Another section of the form requests information on additional behaviors in the past month related to class work and homework as follows: completion of his/her class work, the quality of his/her class work based on performing at grade level, completion of his/her homework, and the quality of his/her homework based on performing at grade level. Based on the responses to these questions, the teacher was asked to rate the overall functioning of the student during the past month. Lastly, the form asked how often the student was absent and tardy during the past month (see Appendix B for teacher/counselor form).
The Discharge Form was collected within the first 30 days after the discharge, meaning the last therapy session. Data collected included the name of the person completing the form, student name, date of birth, date form was completed, date of admission, and agency identification number. Additional information requested included primary caregiver, funding, and CAFAS score. There is a section that collects information on agency/caregiver contact based on services provided such as individual, group, or family sessions, home visits, telephone contact, case management service, medication support, and other. Level of student contact and family/caregiver contact is also requested. The discharge section of the form requests date of discharge, reason for discharge, and status of student’s goals upon discharge (see Appendix C for discharge form).

The Child and Adolescent Functional Assessment Scale (CAFAS) was used as both an independent and dependent measure. The CAFAS is a measure used to rate the degree of functional impairment in children and adolescents with symptoms of emotional, behavioral, or substance use disorders (Hodges, 2003a, 2003b). It was completed within the first 30 (thirty) days of admission (enrollment) based on the timeframe determined by the agency. The CAFAS takes approximately 10 (ten) minutes to complete per the developer (Hodges, 2003a). It rates the level of functioning in five (5) domains and includes (1) Role Performance; (2) Behavior toward Others, (3) Moods/Self-Harm; (4) Substance Use, and (5) Thinking. The CAFAS is comprised of behavioral descriptions from which the clinician chooses the best one that matches the client/student. The clinician rates the CAFAS based on his or her knowledge of the client’s/student’s level of functioning.
Specifically, the level of overall functional impairment is defined by the CAFAS total score as rated by the clinician and is based on the sum of the 5 (five) scales in each domain noted above. For each category, the CAFAS utilizes a 4-level scoring scale to indicate the level of impairment. The levels include the categories of severe impairment (severe disruption or incapacitation, score equals 30), moderate impairment (major or persistent impairment, score equals 20), mild impairment (significant problems and/or distress, score equals 10), and minimal or no impairment (no disruption of functioning, score equals 0).

Examples of descriptions for each CAFAS domain and corresponding scores, as developed by Hodges (1997), are as follows:

**Role performance.** e.g., failing all or most classes; repeated acts of intimidation toward household members; deliberate fire setting with malicious intent, score equals 30 for severe impairment; receiving a reprimand, warning, or equivalent at work, deliberate damage to the home; currently at risk for confinement due to violations of the law, score equals 20 for moderate impairment; occasionally disobeys school rules, with no harm to others or to property, more than other youth; fails to comply with reasonable rules at home; single incident of vandalism, score equals 10 for mild impairment; school grades are average or above; minor problems satisfactorily resolved; score equals 0 for minimal or no impairment.

**Behavior towards others.** e.g., behavior consistently bizarre or extremely odd, score equals 30 for severe impairment; persistent problems/difficulties in relating to peers due to antagonizing behaviors such as threatens or shoves, score equals 20 for moderate impairment; usually quarrelsome, argumentative, or annoying to others, score equals 10
Moods/Self-harm. e.g., depression is accompanied by suicidal intent; has a clear plan to hurt self, score equals 30 for severe impairment; marked changes in mood that are generally intense and abrupt; talks repeatedly about harming self, score equals 20 for moderate impairment; easily distressed if makes mistakes; repeated non-accidental behavior suggesting self-harm but not likely to cause serious injury score equals 10 for mild impairment; experience of sadness and anxiety are age appropriate; behavior is not indicative of self-harm, score equals 0 for minimal or no impairment.

Substance use. e.g., failing or expelled from school related to effects of usage, score equals 30 for severe impairment; friendships change to mostly substance users, score equals 20 for moderate impairment; infrequent excess and only without serious consequences, score equals 10 for mild impairment; no use of substances, score equals 0 for minimal or no impairment.

Thinking. e.g., pattern of short term memory loss/disorientation to time of place most of the time, score equals 30 for severe impairment; preoccupying cognitions or fantasies with bizarre, odd, or gross themes, score equals 20 for moderate impairment; thought distortions, score equals 10 for mild impairment; thought as reflected by communication is not disordered or eccentric, score equals 0 for minimal or no impairment.

Total scores between 0 – 10, suggest no noteworthy impairment; 20 – 30 suggest outpatient treatment as long as risk behaviors are not present (such as suicide risk, severe substance abuse, etc.); total scores between 40 – 60 suggest additional services beyond
outpatient treatment may be indicated; total scores between 70 - 80 suggest more intensive treatment needed with multiple sources of supportive care; and total scores of 90 & higher suggest the likely need for intensive treatment due to the presence of risk factors and available family/community resources (Hodges, 2003a, 2003b). This scale suggests that lower scores are associated with less functional impairment while higher scores are associated with higher functional impairment.

Training on how to use the CAFAS can be done independently using the CAFAS Self-Training Manual which includes ten vignettes for testing a raters’ reliability. Extensive testing for reliability and validity was conducted by the developer using three large data sets (Fort Bragg sample and Center for Mental Health Services sample) obtained from two federally funded projects from the Center for Mental Health Services (CMHS), a branch of the Substance Abuse and Mental Health Services Administration (SAMSHA). In addition, CAFAS data were obtained from a large statewide data base comprised of youth referred to community mental health centers. Coefficient alpha values at intake, 6 months, 12 months, and 18 months were .63, .68, .67, and .67 in the Fort Bragg sample. Alpha values for the CMHS sample were .73 at intake and .78 at 6 months (Hodges, 2003b).

The current study utilized the CAFAS total score, between 0 – 150, based on the 5 (five) domains of role performance, behavior towards others, moods/self-harm, substance use, and thinking. The subscale scores for each domain were not available in the data set and therefore, were not used in this study. The clinicians in this study were all trained in the CAFAS at the start of their employment at Five Acres by their clinical supervisors using the CAFAS Self-Training Manual (Hodges, 2003a).
Independent variables

**Gender.** Found on clinician baseline form, male (coded as 1) and female (coded as 2)

**Ethnicity.** Found on clinician baseline form, Caucasian (coded as 1), African-American (coded as 2), Latino (coded as 3), Asian (coded as 4)

**Primary language.** Found on clinician baseline form, English (coded as 1), Spanish (coded as 2)

**Caregiver Status.** Found on clinician baseline form, Biological parents (coded as 1), Single parent (coded as 2), Other (coded as 3)

**School district.** Found on the clinician baseline form and defined as Pasadena Unified School District, coded as 0 or Monrovia Unified School District, coded as 1.

**Grade level.** Found on referral form, Elementary (coded as 1), Middle school (coded as 2), High School (coded as 3). For those without grade reported, if a student was below 11.5 years, they were considered an elementary school student; if they were above 11.5 but below 14.5 years old, they were considered a middle school student.

**Age.** Found on referral form.

**Teacher rated frequency of student emotional upset.** Found on the teacher/counselor form and defined as how many times in the past month, prior to admission, was the student emotionally distraught or withdrawn and rated on a 4 point scale – where 1 = never (0); 2 = rarely (1-2); 3 = sometimes (3-4); 4 = often (5+).

**Teacher rated overall student functioning.** Found on the teacher/counselor form and defined as how the teacher rated the overall functioning of the student in school in the past month, prior to admission, on a 4 point scale – where 1 = very good (no
problems); 2 = acceptable (good and bad days); 3 = less than acceptable (more bad days than good); 4 = disruptive (problematic leading to suspension or other disciplinary action).

**Teacher Rated Student Aggression.** Found on the teacher/counselor form and defined as how many times in the past month, prior to admission, was the student emotionally distraught or withdrawn and rated on a 4 point scale – where 1 = never (0); 2 = rarely (1-2); 3 = sometimes (3-4); 4 = often (5+)

**Teacher rated student threatening behavior.** Found on the teacher/counselor form and defined as how many times in the past month, prior to admission, was the student emotionally distraught or withdrawn and rated on a 4 point scale – where 1 = never (0); 2 = rarely (1-2); 3 = sometimes (3-4); 4 = often (5+)

**Teacher rated student removal from class.** Found on the teacher/counselor form and defined as how many times in the past month, prior to admission, was the student removed from class and rated on a 4 point scale – where 1 = never (0); 2 = rarely (1-2); 3 = sometimes (3-4); 4 = often (5+)

**Teacher Rated Student Absences.** Found on the teacher/counselor form and defined as how many times in the past month, prior to admission, was the student absent and rated on a 4 point scale – where 1 = never (0); 2 = rarely (1-2); 3 = sometimes (3-4); 4 = often (5+)

**Teacher rated student tardies.** Found on the teacher/counselor form and defined as how many times in the past month, prior to admission, was the student tardy and rated on a 4 point scale – where 1 = never (0); 2 = rarely (1-2); 3 = sometimes (3-4); 4 = often (5+)
**Length of enrollment.** found on the discharge form as date of discharge and defined as the number of months a student received SBMHS.

**Clinician rated baseline CAFAS score.** Found on the clinician baseline form and defined as the 5-scale total CAFAS score at baseline (admission) between 0 – 90 & higher (above 90) for role performance, behavior towards others, moods/self-harm, substance abuse, and thinking.

**Dependent variable**

**Clinician rated discharge CAFAS score.** Found on the discharge form and defined as the 5-scale total CAFAS score at time of discharge between 0 – 150 for role performance, behavior towards others, moods/self-harm, substance abuse, and thinking.

**Data analysis**

SPSS version 20 software was utilized for the current study. To capture the characteristics that make up the sample, frequencies and descriptive statistics were analyzed and presented. This included obtaining the mean, median, standard deviation and assessing for skewness and kurtosis. Missing data were evaluated to determine how much was missing so as not to compromise the integrity of the analyses. For all key variables, missing data exceeded an average 30% of total cases across all variables. Thus, imputation procedures could not be used to estimate missing values (Tabachnick & Fidel, 2007). The research questions were answered using the available data and clarification was provided whenever the N value changed.

This study was exploratory, descriptive, and predictive in nature and used a secondary data set. Given this research design, the dependent variable was the Discharge CAFAS total score. The goal was to explore for important relationships between
variables that will promote a greater understanding of student functioning as measured by the CAFAS total score. The following outlines the data analysis, preliminary data processing, research questions and data analysis plan, and hypotheses.

**Preliminary data processing**

**Assumptions check.** Prior to the analysis, assumptions of the planned ordinary least squares regression analysis were assessed. The assumptions of an ordinary least squares regression analysis are: sufficient ratio of number of cases to independent variables, univariate normality, linearity, absence of outliers among the independent and dependent variables, absence of multicollinearity, and normality, linearity, and homoscedasticity of the residuals (Tabachnick & Fidel, 2007).

**Power.** Having the right ratio of cases to independent variables is important to producing a regression solution that is meaningful. A rule of thumb provided by Tabachnick and Fidell (2007) states that in order to determine that the regression model is significant, one should use the following equation: \( N \geq 50 + 8m \), where \( m \) is the number of predictors in the model. For the current study, the result was 98. This means that at a minimum, 98 students would need to be included in the analysis to detect a medium effect, where \( \alpha = .05 \) and \( \beta = .20 \) (Cohen, 1992), in an equation with six predictors. Anything short of that would suggest that the results should be taken with caution.

**Univariate normality.** Using the exploration tools in SPSS 20, histograms, normality plots, and skewness and kurtosis statistics were examined to determine the quality of the predictors in the model. Non-normality was found for teacher rated student aggression and teacher rated student threatening behavior at enrollment. Violations were severe for the teacher rated student aggression measure. The distribution was severely
positively skewed (1.39) and severely leptokurtic (.918). Likewise, for teacher rated student threatening behavior, the distribution was severely positively skewed (1.99) and severely leptokurtic (2.97). In fact for this variable, there was not enough variation in the data for it to make a meaningful contribution to the analysis. As such log transformations were conducted to determine if these variables could be altered to keep them in the analysis. While the transformation improved the distribution somewhat for teacher rated student aggression (skewness = .962, kurtosis = -.623), the skewness still remained too severe when considering the standard error of the skewness was .243. The transformation was also not sufficient for salvaging the variable measuring teacher rated student threatening behavior (skewness = 1.60, kurtosis = 1.03). It was determined that these distributions were so non-normal, these two variables should be excluded from the analysis.

**Linearity.** Knowing which variables were fit for analysis, scatter plots with a standard Loess line were then created and revealed that all relationships between predictors and the dependent variable were linear.

**Bivariate relationships and collinearity.** Next, a matrix of Pearson product-moment correlations was created to assess issues with multicollinearity between predictors (see Table 4). All variable correlations were below .80. To further assess for multicollinearity, tolerance and variance inflation factors (VIF) were examined for each predictor to determine whether the correlation between each predictor and the set of remaining predictors was problematic. The results revealed tolerance scores less than one and VIF scores under 2.5, indicating no multicollinearity among predictors.
**Outlying or unusual cases.** To determine whether particular cases were discrepant or had undue influence on the estimated regression equation, casewise diagnostics, using DFBETA statistics and Cook’s D, were consulted. Two cases, one from each school district, were identified as having a marked influence on the estimated regression equation with DFBETAs exceeding a value of one. After removing these outlying cases, no additional cases displayed DFBETAs exceeding a value of one and Cook’s D was within tolerance (Cook’s D = .016).

**Residual variance.** Finally, the assumptions of having normally distributed residual variance and homoscedasticity were examined using scatterplots of residual variance and a probability plot of residual variance, which sufficiently test for determining whether the distribution of residuals is problematic (Tabachnick and Fidel, 2007). The residuals were in fact normally distributed and error variance was constant across these plots.

**Missing data.** Data for students enrolled in school-based mental health services were examined in detail prior to running regression analyses. Data points within this secondary data set were missing at various assessment points, in some cases students were missing data on multiple key variables. For example, school district for 14 students was not indicated, data for teacher rated student functioning was missing for 48 students, while teacher rated student emotional upset was not present for 45 students. In all, 58 students were missing at least one point of data. Demographic characteristics of these students were compared to students with complete data. Significant differences between groups were identified only for grade level, $\chi^2(2, N = 144) = 6.95, p = .03$, and for school district, $\chi^2(1, N = 130) = 11.00, p = .001$. In sum, the group with missing data was
comprised of 60% of all middle school aged children in the sample (n = 17), and 50% of students within the Monrovia school district had missing data (n = 26), compared to 22% of students in the Pasadena school district. Importantly, teacher ratings did not differ significantly between those with complete data and those without.

To determine whether these 58 students varied from the remainder of the sample on length of enrollment and baseline and discharge CAFAS scores, a series of independent samples t tests were conducted. It was found that students with missing data were enrolled in school-based mental health services for fewer months ($M = 14.41$, $SD = 9.79$) than their counterparts with complete data ($M = 19.01$, $SD = 11.30$). Students were identical with respect to CAFAS baseline and discharge scores.

For the purposes of the regression analysis conducted, listwise deletion was used, in effect excluding students with missing data. This solution was chosen because it is the simplest approach to dealing with an abundance of missing data. Recall that teacher rated student aggression and teacher rated student threatening behavior were removed from the analysis due to assumption violations. The resulting power requirement dropped to 90 students ($50 + 8(5\text{ predictors}) = 90$). However, complete data on all key measures were present for only 84 students (after the removal of two cases due to their undue influence on the regression equation). Given that fewer than 90 students had complete data for all predictor variables, the model was trimmed to include only four predictor variables.

Teacher rated overall student functioning was removed from the analysis based on the correlation results (see Table 4). Thus, a model with four predictors would require a minimum of 82 students. With the removal of teacher rated overall student functioning, a
total of 89 students had complete data for the final analysis. The results for the regression analysis presented in chapter 4 are based on these students.

**Revised Conceptual Model**

**Figure 4.** Revised conceptual model

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**Research question 1 (RQ1).** What are the characteristics of students referred for SBMHS?

**Data analysis plan.** The plan included obtaining frequencies and descriptive statistics on the characteristics of students in the sample including ethnicity, gender, age
range, and caregiver status. In addition, to assess differences between school districts and demographics on key variables, statistical tests were conducted including chi-square test of independence and Bonferroni corrected independent samples t tests. This correction accounts for additive Type 1 error when conducting multiple t tests on related outcomes. For example, if seven t tests are conducted on seven outcome variables that are correlated with each other, one would divide the standard .05 significance level by seven; the result is .007, which serves as the adjusted critical significance level. Any p values exceeding this cutoff would not be considered significant. To further understand RQ₁, teacher ratings were examined across gender, ethnicity, and grade level.

**Research question 2 (RQ2).** What is the level of impairment of students referred for SBMHS as measured by clinician rated baseline and discharge CAFAS total scores?

**Data analysis plan.** The plan included obtaining frequencies and descriptive statistics. In addition, to assess differences between school districts on key variables, statistical tests were conducted including independent and paired samples t tests. Last, a correlation matrix was constructed to assess the bivariate relationships between teacher ratings and CAFAS discharge scores.

**Research question 3 (RQ3).** Controlling for clinician rated baseline CAFAS total scores, to what extent are school district, length of enrollment and teacher rated frequency of student emotional upset at enrollment associated with Discharge CAFAS total scores?

**Data analysis plan.** An ordinary least squares (OLS) multiple regression analysis with a hierarchical entry strategy containing two blocks was used to assess the association between predictor variables and post CAFAS total scores at discharge.
Hypotheses tested

Hypothesis 1 (H1). Longer lengths of enrollment in SBMHS will be associated with lower discharge clinician rated CAFAS scores (e.g., lower scores mean lower functional impairment).

Hypothesis 4 (H4). Teacher rated emotional upset will be associated with higher clinician rated discharge CAFAS scores (e.g., higher scores mean higher functional impairment).

Hypotheses untested after results from preliminary data analysis

Hypothesis 2 (H2). Teacher rated student aggression will be associated with higher clinician rated discharge CAFAS scores (e.g., higher scores mean higher functional impairment).

Hypothesis 3 (H3). Teacher rated student threatening behavior will be associated with higher clinician rated discharge CAFAS scores (e.g., higher scores mean higher functional impairment).

Hypothesis 5 (H5). Teacher rated overall student functioning will be associated with higher clinician rated discharge CAFAS scores (e.g., higher scores mean higher functional impairment).

Findings related to each research question and hypotheses tested are included in the next chapter.
CHAPTER 4

Results

This chapter provides a summary of the findings in this study. First, student demographic characteristics are presented in conjunction with research question 1 (RQ1), followed by the substantive analysis corresponding to research questions 2 (RQ2) and 3 (RQ3) respectively.

Research Question 1 (RQ1): What are the characteristics of students referred for SBMHS?

To answer research question one, frequencies and descriptive statistics were used. Additionally, to assess differences between the two school districts and across demographics on key variables, appropriate statistical tests were conducted (chi-square test of independence, independent samples t test).

Overall Student Demographics. A total of 144 students enrolled in school-based mental health services were examined. Sample information is presented in Table 1, with counts of missing data included. This school-based mental health services sample was comprised of 75 males (52.1%) and 59 females (41.0%). Student gender was not indicated for 10 (6.9%) students. The predominant ethnic groups represented in the sample were Latino (n = 82, 56.9%) and African-American (n = 30, 20.8%). Reported first language was primarily English (n = 97, 67.4%). Additionally, over half of students came from single parent homes (n = 77, 53.5%). Student ages ranged from 5 years and one month to 16 years and 9 months old with a mean of 10.04 (SD = 2.96). Of those with grade reported, the largest proportion of students were second graders (18.2%) followed by third and fifth graders (15.2%, respectively). For those without grade reported, age
was used as a proxy for grade to create a variable called grade level. Using this
convention, the distribution of students across grade levels indicates that the majority of
the sample was comprised of elementary school students \(n = 101, 70.1\%\), followed by
middle school students \(n = 28, 19.4\%\), and lastly high school students \(n = 15, 10.4\%\).
Students sampled were from the Pasadena \(n = 79, 54.9\%\) and Monrovia School Districts
\(n = 51, 35.4\%\). The school district for 14 students was not provided.

**School District demographic comparisons.** The data were then examined to
determine whether there were significant differences between both school districts on
demographic variables. To do so, chi-square tests of independence were conducted to
determine whether there was an association between school district and the following
variables: gender, ethnicity, primary language and caregiver status. There was no
association between school district and gender variables, \(\chi^2(1, N = 124) = .489, p = .485\).
This indicates that student gender does not vary significantly by school district. Likewise,
there was no association between school district and ethnicity, \(\chi^2(5, N = 120) = 4.21, p =
.519\). Furthermore, there was no association between primary language and school
district, \(\chi^2(1, N = 123) = 3.64, p = .056\). There was, however, a significant association
between caregiver status and school district, \(\chi^2(4, N = 130) = 11.21, p = .024\). This
finding was driven by the observed frequencies of students with biological parents. There
were fewer students with biological parents in the Monrovia school district (17.6\%) as
compared with the number of students with biological parents in the Pasadena school
district (29.1 \%) (see Table 2).

An association between student grade and school district was also examined using
an independent samples \(t\) test to compare the mean grade between districts. A significant
mean difference was found, $t(31.97) = -5.00, p < .001$, such that the average grade of students enrolled in school-based mental health services in the Monrovia school district ($M = 6.42, SD = 3.22$) was significantly higher than the average grade of those enrolled in the Pasadena school district ($M = 3.05, SD = 1.87$). In effect, Monrovia students were older and farther along in their education than students in the Pasadena school district. This finding is also corroborated when using the newly created grade level variable, $\chi^2(2, N = 130) = 45.54, p < .001$ (see Table 2).

**Teacher ratings by gender, ethnicity, and grade level.** Teacher ratings of emotional upset, functioning, aggressiveness, threatening behavior, and frequency of being removed from class were examined across gender, ethnicity, and grade level (see Table 3). Overall, boys were a) rated as having less functioning, b) rated as being more aggressive, and c) removed from class more often than girls (all $t$’s $> \pm 2.9$, Bonferroini correct $p$’s < .007). Teacher ratings did not differ across ethnicity or grade levels. In addition, no differences in absences and tardies were observed across these demographic variables (see Table 3).

**Research Question 2 (RQ2): What is the level of impairment of students referred for SBMHS as measured by baseline and discharge CAFAS scores?**

To answer research question two (RQ2), frequencies and descriptive statistics were used. Additionally, to assess differences between school districts on key variables, appropriate statistical tests were conducted (independent and paired samples $t$ tests).

**Student enrollment characteristics.** Enrolled students varied in the length of time they participated in school-based mental health services. The mean length of time enrolled in the school-based program was 17.16 months ($SD = 10.69$), ranging from 3 to
51 months. Student mental health functioning was also assessed at enrollment using the CAFAS. Scores at enrollment ranged from 0 to 120 with a mean of 50.69 (SD = 23.79). CAFAS scores at discharge ranged from 0 to 100, with a mean of 36.46 (SD = 25.41), markedly lower than scores at enrollment as evidenced by a paired samples t test, $t(143) = 7.33, p < .001$. This indicates that overall, students began with lower functioning and their functioning improved by the time they were discharged from school-based mental health services. No differences in baseline and discharge CAFAS scores were found across gender, ethnicity, or grade level (all $p$’s $> .025$).

**Correlations between teacher ratings and CAFAS scores at discharge.**

Statistical relationships between teacher ratings are presented in Table 4. All teacher ratings at time of enrollment were significantly associated with clinician rated CAFAS scores at discharge, however emotional upset was more strongly associated than all other variables ($r = .42, p < .01$). Unsurprisingly, very strong correlations were observed between aggressiveness and threatening behavior ($r = .71, p < .01$) and removal from class ($r = .70, p < .01$), respectively.

**School district comparison.** In order to determine whether differences on length of enrollment and discharge CAFAS scores were evident between school districts, three independent samples t tests were conducted. No significant mean difference between districts was found for length of enrollment, $t(126.01) = -.7750, p = .440$. Likewise, no significant differences were identified for CAFAS scores at baseline ($t[128] = 1.73, p = .084$) or at discharge ($t[121.75] = 1.97, p = .051$). This indicates that on average, Monrovia and Pasadena school district students were similar in their length of time
enrolled in school-based mental health services and their level of functioning at baseline and at discharge (for descriptive statistics by school district, see Table 5).

**Research Question 3 (RQ3):** Controlling for baseline CAFAS scores, to what extent are school district, length of enrollment, and teacher rated frequency of student emotional upset at enrollment, associated with CAFAS scores at discharge?

To answer research question three (RQ3), a correlation matrix was created to assess bivariate relationships between key variables. Next, an ordinary least squares regression analysis was conducted to explore these relationships more in depth and to examine support for the specific hypotheses. The correlation matrix and descriptive statistics for key variables are contained in Table 6.

**OLS regression.** An ordinary least squares (OLS) multiple regression analysis with a hierarchical entry strategy containing two blocks was used to assess the associations between predictor variables and CAFAS scores at discharge (see Table 7). The first model included baseline CAFAS scores, a covariate to control for student baseline impairment. This first model significantly predicted discharge CAFAS scores, $R^2_{change} = .27$, $F(1,87) = 33.34$, $p < .001$. The second model contained, school district, (where the Pasadena school district was the reference group), length of enrollment in the school-based program, and teacher rated frequency of emotional upset at enrollment. These variables were included in the analysis using the “Enter” method which places the variables into the second block all at once, giving each the opportunity to compete for the remaining variance in discharge CAFAS scores. This second model significantly predicted discharge CAFAS scores, $R^2_{change} = .16$, $F(3,84) = 7.94$, $p < .001$, explaining an additional 16.0% of the variance in discharge CAFAS scores. Among the variables
included in the second model, teacher-ratings of frequency of student emotional upset at time of enrollment was found to be positively associated with discharge CAFAS scores, after controlling for every variable in the model, $b = .35, t(84) = 4.13, p < .001$. Using the unstandardized regression coefficient ($b = 8.41$), and stated another way, every single point increase in teacher rated student emotional upset was associated with a 8.41 increase in CAFAS scores (recall that an increase in CAFAS scores indicates poorer functioning). School district and length of stay were non-significant.

**Hypotheses tested and results:**

**H1.** Longer lengths of enrollment in SBMHS will be associated with lower discharge CAFAS scores (e.g., lower scores mean lower functional impairment).

**Result:** In the second regression model, length of enrollment was not found to be significant and this hypothesis was not supported.

**H4.** Teacher rated frequency of student emotional upset will be associated with higher discharge CAFAS scores (e.g., higher scores mean higher functional impairment).

**Result:** After controlling for every variable in the second model of the regression, teacher rated frequency of student emotional upset was found to be positively associated with discharge CAFAS scores (e.g., higher scores mean lower functioning), $b = .284, t(78) = 2.91, p = .005$. This hypothesis was supported.

**Hypotheses untested with explanations**

**H2.** Teacher rated student aggression will be associated with higher discharge discharge CAFAS scores (e.g., higher scores mean higher functional impairment).

**Explanation:** The distribution for teacher rated student aggression was severely Positively skewed (1.39) and severely leptokurtic (.918). As a result of this assumption
violation for univariate normality, this hypothesis could not be tested.

**H3.** Teacher rated student threatening behavior will be associated with higher discharge CAFAS scores (e.g., higher scores mean higher functional impairment).

*Explanation:* The distribution for teacher rated student threatening behavior was severely positively skewed (1.99) and severely leptokurtic (2.97). Due to this assumption violation for univariate normality, this hypothesis could not be tested.

**H5.** Teacher rated student functioning will be associated with higher discharge CAFAS scores (e.g., higher scores mean higher functional impairment).

*Explanation:* This variable was removed from the analysis due to power concerns.

**Summary.** A multiple regression analysis using a hierarchical entry strategy was used to determine a) the extent to which CAFAS scores at baseline were associated with CAFAS scores at discharge and b) whether school district, length of enrollment, and teacher rated student emotional upset were independently associated with CAFAS scores at discharge, above and beyond the influence of baseline CAFAS scores. The analysis revealed that baseline CAFAS scores were positively associated with CAFAS scores at discharge. After controlling for this relationship, school district, length of enrollment, and teacher rated frequency of student emotional upset at discharge were entered into the second block and their respective effects were assessed. This second block of the regression analyses demonstrated that there was no association between discharge scores and school district and length of the enrollment. However, teacher ratings of students’ frequency of emotional upset at school was significantly positively associated with
discharge scores, above and beyond the influence of baseline CAFAS scores and the remainder of variables in the model.
CHAPTER 5
Discussion

This chapter will discuss the findings and implications of the current study and discuss recommendations for future research.

Overview of findings

This study was a secondary analysis of 144 children and youth referred for SBMHS in two school districts in the Los Angeles County area. The sample was comprised of 75 males (52.1%) and 59 females (41.0%). The main ethnic groups represented were Latino (n = 82, 56.9%) and African American (n = 30, 20.8%). The age range of the subjects was 5 years one month to 16 years and 9 months with a mean of 10.04 (SD = 2.96). The distribution of students across grade levels show that the majority of the sample was comprised of elementary school students (n = 101, 70.1%), followed by middle school students (n = 28, 19.4%), and lastly high school students (n = 15, 10.4%). The subjects in this sample were from the Pasadena (n = 79, 54.9%) and Monrovia School Districts (n = 51, 35.4%) (see Table 1).

The data were examined to assess for significant differences between school districts and demographic variables. Chi-square tests of independence were conducted to determine whether there was an association between school district and gender, ethnicity, primary language and caregiver status. The results did not show any association between school district and gender, $\chi^2(1, N = 124) = .489, p = .485$; ethnicity, $\chi^2(5, N = 120) = 4.21, p = .519$ or primary language, $\chi^2(1, N = 123) = 3.64, p = .056$. However, there was a statistically significant association between caregiver status and school district, $\chi^2(4, N = 130) = .024$. There were fewer students with biological parents in the Monrovia school...
district (17.6%) as compared with the number of students with biological parents in the Pasadena school district (29.1%) (see Table 2).

Teacher rating of student emotional upset, teacher rating of overall student functioning, teacher rating of student aggressive behavior, teacher rating of student threatening behavior, and teacher rating of student removal from class were examined across gender, ethnicity, and grade level. Overall, boys were rated as having lower functioning, being more aggressive, and removed from the class more often than girls (all $t$’s > ±2.9, $p$’s < .007). Teacher ratings did not differ across ethnicity or grade levels. Lastly, no differences in absences and tardies were observed across these demographic variables (see Table 3).

The mean length of time enrolled in the SBMHS program was 17.16 months ($SD = 10.69$), ranging from 3 – 51 months. Student functioning was also determined at enrollment using the total score from the CAFAS. The range of the scores at enrollment was 0 – 120 with a mean of 50.69 ($SD = 23.79$). CAFAS scores at discharge (total score) ranged from 0 – 100, with a mean of 36.36 ($SD = 25.41$), markedly lower than scores at enrollment as evidenced by a paired samples $t$ test, $t(143) = 7.33$, $p < .001$. Overall, this demonstrates participants began with lower functioning and improved by the time of discharge (see Table 5). There were no differences in baseline and discharge CAFAS across gender, ethnicity, or grade level (all $p$’s > .025).

Correlations between teacher ratings and CAFAS scores at discharge were assessed in. All teacher ratings were significantly associated with CAFAS scores with emotional upset more associated compared to all other variables ($r = .42$, $p < .01$).
Correlations were observed between aggressiveness and threatening behavior ($r = .71, p < .01$) and removal from class ($r = .70, p < .01$), respectively (see Table 4).

An ordinary least squares (OLS) multiple regression analysis with a hierarchical entry strategy containing two blocks was used to assess the association between predictor variables and CAFAS scores at discharge. The first model included baseline CAFAS scores and significantly predicted discharge CAFAS scores, $R^2_{change} = .27, F(1,87) = 33.34, p < .001$. The second model included school district, length of enrollment, and teacher rated frequency of student emotional upset and significantly predicted discharge CAFAS scores, $R^2_{change} = .16, F(3,84) = 7.94, p < .001$, explaining an additional 16.0% of the variance in discharge CAFAS scores. The variable teacher ratings of frequency of student emotional upset at time of enrollment was found to be positively associated with discharge CAFAS scores, after controlling for every variable in the model, $b = .35, t(84) = 4.13, p < .001$ (see Table 7).

**Discussion and interpretation of the findings**

**Demographics.** The results for student characteristics in relation to gender are consistent with findings in other school-based mental health research. In the current study and in spite of missing data, males comprised a larger group compared to females in the sample. Previous studies indicate male students are referred for SBMHS at a higher rate compared to females (Armbruster et al., 1997; Atkins et al., 2006). This has been attributed to males being associated with externalizing behaviors compared to female students (Adelman & Taylor, 2005; Burns et al., 1995). In contrast, female students are associated with internalizing behaviors that may be easier to go unnoticed by teachers.
(Hoagwood et al., 1997). Other studies show that classroom disruption is associated with students that are male compared to female students (Rones et al., 2000).

As for ethnicity, Latino students and African-American students comprised the majority of school referrals for mental health services in both school districts in this study. This result reflects the composition of the schools and school districts which have high minority populations. As a result, it cannot be implied from this study that minority children and youth have more mental health problems compared to the general population. This result demonstrates the diversity found in public schools in Los Angeles County.

In terms of caregiver status, over half of the sample came from single parent households. This result aligns with prior research that shows higher rates of single parent households in low income urban communities (Manteuffel et al., 2002). While underlying issues for this finding were not addressed in this study, this result reflects another important area for providers to consider when addressing family issues in a school-based mental health program.

The results further show that the majority of students in this study were younger and enrolled in elementary school. This supports earlier research that indicates SBMHS are provided at higher rates in elementary schools compared to high schools and that participants in services are younger not older (Hoagwood et al., 1997; Hoagwood et al., 2007; Rones et al., 2000). The current study did not explore the underlying reasons for this finding. However, this is a good result of the study since the earlier a child receives prevention and early intervention services, the better potential for positive outcomes.
Length of enrollment. Length of enrollment indicated a wide range (e.g., 3 – 51 months) among the students who received SBMHS. The study was unable to explain the reason for this finding and is therefore a limitation of the study. It is important to further explore the role that length of enrollment plays in overall treatment outcomes. Prior studies do not indicate a consensus regarding length of enrollment and if for example, longer treatment produces better treatment outcomes (Hoagwood et al., 2007). In addition, this variable has further relevance to SBMHS since students start services throughout the year and services often get disrupted during the summer resulting in different lengths of treatment. Length of enrollment is also relevant if evidence-based practice models are used in the program as most models have specific treatment timelines.

Teacher ratings. As for teacher ratings of student emotional upset, student functioning, student aggression, student threatening behavior, student removal from class, absences, and tardies; the results indicate boys as having less functioning, being more aggressive, and removed from class more often than girls. The results pertaining to boys’ aggression and removal from class, reflective of lower functioning, support existing research with similar findings (Kataoka et al., 2002). Teacher ratings did not differ across ethnicity or grade levels. Likewise, no differences in absences and tardies were observed across these demographic variables – gender, ethnicity, and grade levels.

The limitation of this finding is the small sample size and the data collection form used by teachers which leaves room for subjectivity - a common criticism of measures of functioning (Bates, 2001). Teacher ratings are important in school-based mental health research but need to be monitored because of the risk for subjectivity and bias (Atkins et
The current study did not explore teacher subjectivity or bias and is a limitation of the study. Unaddressed bias can lead to misperceptions about student behavior such as attribution of behavior and labeling of students (Atkins, et al., 2006; Esposito, 1999; Williams et al., 2007). This can impact the kinds of services recommended for students.

CAFAS scores. The findings related to the CAFAS scores (see Table 5) show that students began services with lower functioning and improved by the time they were discharged from the program. The limitation of this finding is that the improvement in functioning is not explained and as such, no conclusions can be drawn as to the reason for the improvement. In addition, another limitation to this study is the lack of information regarding the reason for discharge. This study cannot validate that all students successfully completed their treatment. This lack of information impacts the conclusions that can be drawn from the study regarding student functioning. At the same time, student functioning is an important variable to consider in school-based mental health research because it reflects on the mental health of children and youth (Hoagwood et al., 2007; Hodges et al., 2004). Changes in functioning across various domains are indicative of underlying issues that warrant further exploration (Hodges, 1998). It is usually these changes that draw attention to the mental health needs of students.

Correlations between teacher ratings and CAFAS scores at discharge were significantly associated. However, emotional upset demonstrated a stronger association than the other variables \( r = .42, p < .01 \). What constitutes emotional upset is not defined in this study along with the other teacher ratings. This is a limitation of the study as the lack of a definition leaves room for interpretations that may not be consistent across
teachers who are rating the students. At the same time, based on the strength of the relationships between teacher ratings and CAFAS scores at discharge, this finding should not be minimized. At the very least, this finding suggests that teachers in this study, observed some level of functional impairment, enough so that they reflected this in their responses.

A multiple regression analysis was used to assess the associations between predictor variables and CAFAS scores at discharge on 89 students. The limitation of this analysis is the small sample size due to missing data and assumption violations of some of the independent variables which prevented their use in the regression model. Though the results were significant, caution is needed before generalizing these findings. At most, these findings show that baseline CAFAS scores were positively associated with CAFAS scores at discharge. Next, after controlling for this relationship, school district, length of enrollment, and teacher rated frequency of emotional upset at enrollment were assessed. This second block of the regression analyses indicated no association between CAFAS scores at discharge and school district and length of enrollment. However, teacher ratings of frequency of student emotional upset at school was positively associated with discharge CAFAS scores, above and beyond the influence of the baseline CAFAS scores and the other variables in the model (see Table 7). This finding is not surprising since student emotional upset appears to reflect a type of functioning more than the other variables in the model. The underlying reason for student emotional upset was not explored and is another limitation of the study. In addition, not having a universal definition of functioning limits the ability to generalize these findings.
**Hypotheses.** In terms of the five hypotheses for this study, only one was supported by the findings – teacher rated frequency of student emotional upset will be associated with higher discharge CAFAS scores (e.g., higher scores mean lower functioning). The other hypotheses involved length of enrollment being associated with lower discharge CAFAS scores – not supported; teacher rated student aggression associated with higher discharge CAFAS scores – due to assumption violations, this hypothesis could not be tested; teacher rated student threatening behavior will be associated with higher discharge CAFAS scores – also due to assumption violations, this hypothesis could not be tested; teacher rated student functioning will be associated with higher discharge CAFAS scores – this variable was removed due to power concerns and this hypothesis could not be tested.

Teachers have the opportunity to provide a wealth of information for mental health providers regarding student functioning. However, the extent to which teacher ratings are influenced by rater bias needs further examination.

**Strengths of the study**

The strengths of the study include the use of teacher ratings and clinician ratings to understand the interrelationship between academic and mental health outcomes. In addition, the focus of the study was on functional impairment of children referred for SBMHS and not on a diagnostic category. Furthermore, the theoretical frameworks of developmental psychopathology and the ecological model provide a complimentary context by which to further understand the needs of children with mental health problems.
Specifically, the results of this study showed the majority of children who received SBMHS were elementary students. This finding supports the use of prevention and early intervention services for children so that they receive services earlier rather before problems worsen. In addition, the results show that participants did benefit from SBMHS based on the change in CAFAS scores which is an important strength of this study.

**Limitations**

The limitations of this study include the size of the sample, lack of control group, and possibility of rater bias, inability to test all variables and CAFAS subscales and the generalizability of the findings due to the research design. Not having a control group prevents the ability to attribute causation or to explain why children’s CAFAS scores improved by the end of treatment.

**Implications for practice**

In spite of several hypotheses that were unable to be tested and other limitations of the current study, there are a number of areas that are in need of further examination. Specifically, it is important to understand evidence–based practice (EBP) models and how they relate to dosage in SBMHS. This provides an opportunity to evaluate specific models and protocols that may help explain outcomes compared to treatment as usual approaches that lack clear expectations. For example, longer treatment is not necessarily better or appropriate for children with mild mental health problems while it may be appropriate for children with more severe mental health needs. The use of EBP models provides guidelines that help clinicians monitor treatment length and allows more children to receive SBMHS. It is also important that if the CAFAS is used as an outcome
measure that it used more often to monitor medical necessity in Medicaid funded SBMH programs as this is another way to monitor length of treatment. Overall, better models are needed to understand treatment and drift within a context of scarcer resources in special education and Medicaid funded programs.

In addition, better data collections methods are needed to ensure that the data is complete and accurate for research purposes. Since teachers are often the referral source for students in need of mental health services it is important to consider the use of teacher screenings or ratings in the referral process. For example, teacher assessment of emotional upset could be included in referral screenings which may lead to stronger data which contributes to validity. Since teachers spend the majority of time with their students they are most familiar with their classroom behaviors. Consequently, this approach strengthens the collaboration between teachers and clinicians.

Another consideration for practice is the use of demographic data similar to those used in this study – gender, ethnicity, language, and caregiver status. This information is important because it informs practice and guides decision making related to program development (Burns et al., 1995; Hoagwood et al., 2007). Student characteristics are embedded within family, school, and community domains. Failure to understand their relevance could imply a one size fits all approach to mental health services and ignores the unique needs of the student. Interventions including the use of evidence-based practices must be appropriate to the population being served and culturally sensitive especially in school districts that are ethnically diverse.

In addition, the relationship between functional impairment and both mental health and school outcomes must be seen as interrelated (Hoagwood et al., 2007). To
view mental health and school outcomes as unrelated contributes to an incomplete understanding of the relationship based on a lack of context that is needed to inform effective practice. This understanding is especially important in low income communities where children and families are impacted by poverty and crime and where it is estimated that 21% of low income children have mental health problems (Howell, 2004). More recently, students suffering from trauma and violence are suing Compton Unified School District in Los Angeles County for failing to address their mental health problems and provide an appropriate education (Watanabe, 2015).

Another consideration for practice involves the funding source of school-based mental health services and the requirements placed on clinicians from community-based agencies. For example, clinicians who provide services under Medicaid funding are often under pressure to bill a certain amount of service hours each week in order to meet monthly targets under the contract. This creates added pressure that can impact service delivery if not carefully monitored by agency supervisors.

**Implications for research**

Since school-based mental health services (e.g., individual therapy, type of intervention) were not defined in the current study, it is not possible to explain why student functioning improved based on the clinician rated baseline and discharge CAFAS scores. This can be addressed by using experimental designs that include control groups in future research. In addition, future research of SBMHS can be strengthened by using the CAFAS subscales besides the total score, having better definitions of constructs through the use of evidence-based practices, and looking at data collection and rater accuracy in busy service settings. Lastly, it is recommended that the change in CAFAS
scores be studied as a dependent variable and other variables such as clinician and teacher characteristics be considered in future research.

Conclusions

The purpose of this study was to explore the functional impairment of students referred for SBMHS provided by clinicians from a public funded community-based agency. Specifically, this study explored academic predictors of the total score of the Child and Adolescent Functioning Assessment Scale (CAFAS) among students referred for SBMHS in two urban school districts in Los Angeles County. In addition, the study explored the characteristics of students referred for SBMHS and the relationship between clinician rated CAFAS scores at the time of program admission and discharge. The background of this study was the prevalence of mental health problems in children and youth, the rates of children and youth who do not receive mental health services, and the identification of schools as the primary provider of mental health services.

Overall, the findings, though limited, suggest the need to examine teacher ratings and other academic predictors of CAFAS scores, a measure of functioning. The study showed with no comparison group that CAFAS scores changed after students received SBMHS, indicating a positive change in functioning. This supports investing resources in SBMH research that targets predictors of functioning and beyond that, the impact of functioning on academic outcomes. A research agenda built on this foundation goes deeper than a classification system that merely labels children and youth without exploring the context of their functioning at different levels (e.g., individual, family, school, community).
### Table 1. Overall sample demographic characteristics of students enrolled in school based mental health services (N = 144)

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<thead>
<tr>
<th>Gender</th>
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<td>Male</td>
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<td>Age Mean</td>
</tr>
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<td>-------------------</td>
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</tr>
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<td>Monrovia SD</td>
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**Grade Level**

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<td>High school</td>
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<table>
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<th>SD</th>
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Table 2. Sample demographic characteristics by school district. (N = 144)

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<tr>
<th></th>
<th>Pasadena</th>
<th>Monrovia</th>
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<tbody>
<tr>
<td>% within district (n)</td>
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<td></td>
</tr>
<tr>
<td>Gender</td>
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<td></td>
</tr>
<tr>
<td>Male</td>
<td>60.5% (46)</td>
<td>54.2% (26)</td>
</tr>
<tr>
<td>Female</td>
<td>39.5% (30)</td>
<td>45.8% (22)</td>
</tr>
<tr>
<td>Ethnicity</td>
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<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>12.0% (9)</td>
<td>11.1% (5)</td>
</tr>
<tr>
<td>African American</td>
<td>21.3% (16)</td>
<td>28.9% (13)</td>
</tr>
<tr>
<td>Latino</td>
<td>64.0% (48)</td>
<td>60.0% (27)</td>
</tr>
<tr>
<td>Asian</td>
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<td>0.0% (0)</td>
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<tr>
<td>Primary Language</td>
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<td></td>
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<tr>
<td>English</td>
<td>65.3% (49)</td>
<td>81.2% (39)</td>
</tr>
<tr>
<td>Spanish</td>
<td>34.7% (26)</td>
<td>18.8% (9)</td>
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<td>Caregiver Status</td>
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</tr>
<tr>
<td>Biological parents</td>
<td>29.1% (23)</td>
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<td>Single parent</td>
<td>57.0% (45)</td>
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<td>Other</td>
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<td>29.5% (15)</td>
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<td>Grade Level</td>
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</tr>
<tr>
<td>Elementary</td>
<td>92.4% (73)</td>
<td>39.2% (20)</td>
</tr>
<tr>
<td>Middle school</td>
<td>7.6% (6)</td>
<td>33.3% (17)</td>
</tr>
<tr>
<td>Age</td>
<td>8.65 (1.99)</td>
<td>11.52 (3.30)</td>
</tr>
<tr>
<td>-------</td>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Grade</td>
<td>3.05 (1.87)</td>
<td>6.42 (3.22)</td>
</tr>
</tbody>
</table>

*n’s across variables vary due to missing data
Table 3. Means and standard deviations of teacher ratings by gender and ethnicity (N = 144)\(^1\)

<table>
<thead>
<tr>
<th></th>
<th>Emotional upset</th>
<th>Functioning</th>
<th>Aggressive behavior</th>
<th>Threatening behavior</th>
<th>Removed from class</th>
<th>Absences</th>
<th>Tardies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female ((n = 38))</td>
<td>1.16 (.89)</td>
<td>3.22 (.83)(a)</td>
<td>.21 (.52)(b)</td>
<td>.16 (.43)</td>
<td>.34 (.66)(c)</td>
<td>1.24 (.101)</td>
<td>1.08 (1.03)</td>
</tr>
<tr>
<td>Male ((n = 51))</td>
<td>1.22 (.99)</td>
<td>2.65 (.90)(a)</td>
<td>.74 (.94)(b)</td>
<td>.51 (.89)</td>
<td>.90 (1.10)(c)</td>
<td>1.24 (.109)</td>
<td>.96 (1.08)</td>
</tr>
<tr>
<td><strong>Ethnicity(^2)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian ((n = 9))(^3)</td>
<td>1.33 (.86)</td>
<td>2.89 (1.05)</td>
<td>.44 (.72)</td>
<td>.11 (.33)</td>
<td>.33 (.70)</td>
<td>2.00 (.86)</td>
<td>2.00 (.100)</td>
</tr>
<tr>
<td>African American ((n = 21))</td>
<td>1.33 (1.01)</td>
<td>2.57 (.87)</td>
<td>1.00 (1.04)</td>
<td>.76 (.99)</td>
<td>1.19 (1.07)</td>
<td>1.67 (1.11)</td>
<td>1.19 (1.16)</td>
</tr>
<tr>
<td>Latino ((n = 54))</td>
<td>1.10 (1.03)</td>
<td>2.98 (.91)</td>
<td>.34 (.70)</td>
<td>.25 (.65)</td>
<td>.52 (.92)</td>
<td>.92 (.92)</td>
<td>.79 (.93)</td>
</tr>
</tbody>
</table>

\(^1\)n’s vary across teacher ratings due to missing data

\(^2\)Asian was omitted due to there being only being 1 Asian student with complete data

\(^3\)Comparisons across ethnicity cited in text did not include Caucasians because the majority of students in this group were female, thus gender would confound observed differences.

Matching letter subscripts represent significant differences between males and females at a Bonferroni-corrected alpha of .007.
Table 4. Correlations and descriptive statistics for teacher rated items, absences, and tardies for the total sample (N = 144)

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Emotional upset</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 School functioning</td>
<td>-.43**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Aggressiveness</td>
<td>.32**</td>
<td>-.58**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Threatening behavior</td>
<td>.37**</td>
<td>-.41**</td>
<td>.71**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Removed from class</td>
<td>.34**</td>
<td>-.67**</td>
<td>.70**</td>
<td>.57**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Absences</td>
<td>.19</td>
<td>-.17</td>
<td>.19</td>
<td>.11</td>
<td>.17</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Tardies</td>
<td>.32**</td>
<td>-.24*</td>
<td>.23*</td>
<td>.19</td>
<td>.14</td>
<td>.60**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>8 CAFAS discharge</td>
<td>.42**</td>
<td>-.29**</td>
<td>.32**</td>
<td>.33**</td>
<td>.34**</td>
<td>.23**</td>
<td>.30**</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.19</td>
<td>2.84</td>
<td>.53</td>
<td>.38</td>
<td>.66</td>
<td>1.26</td>
<td>1.01</td>
<td>36.46</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>.97</td>
<td>.92</td>
<td>.82</td>
<td>.77</td>
<td>.98</td>
<td>1.04</td>
<td>1.02</td>
</tr>
<tr>
<td></td>
<td>Min</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Max</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>100</td>
</tr>
</tbody>
</table>

*’s vary across variables due to missing data
Table 5. Descriptive statistics of enrollment characteristics for the total sample and between school districts (N = 144)\(^1\).

<table>
<thead>
<tr>
<th></th>
<th>Pasadena</th>
<th>Monrovia</th>
<th>(t)</th>
<th>(p)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Length of Stay (months)</strong></td>
<td>16.64 (12.24)</td>
<td>18.08 (8.93)</td>
<td>-.77</td>
<td>.440</td>
</tr>
<tr>
<td><strong>CAFAS Scores</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>51.97 (22.41)</td>
<td>45.36 (23.01)</td>
<td>1.73</td>
<td>.084</td>
</tr>
<tr>
<td>Discharge</td>
<td>38.18 (26.24)</td>
<td>27.50 (21.53)</td>
<td>1.97</td>
<td>.051</td>
</tr>
</tbody>
</table>

\(^1\) n’s vary across variables due to missing data
Table 6. Correlation matrix depicting associations between planned predictors and CAFAS scores at discharge with predictor variable descriptive statistics appended. (N = 144)\(^1\)

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 CAFAS score at baseline</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 School district</td>
<td>-.15</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Length of stay</td>
<td>.02</td>
<td>.06</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Teacher rated frequency of</td>
<td>.25*</td>
<td>-.05</td>
<td>-.02</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>student emotional upset</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 CAFAS score at discharge</td>
<td>.55**</td>
<td>-.16</td>
<td>-.13</td>
<td>.42**</td>
<td>1</td>
</tr>
</tbody>
</table>

\(M\)  

<table>
<thead>
<tr>
<th></th>
<th>50.69</th>
<th>17.16</th>
<th>1.19</th>
<th>36.46</th>
</tr>
</thead>
</table>

\(SD\)  

<table>
<thead>
<tr>
<th></th>
<th>23.79</th>
<th>10.92</th>
<th>.97</th>
<th>25.40</th>
</tr>
</thead>
</table>

\(\text{Min}\)  

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>0</th>
<th>0</th>
<th>0</th>
</tr>
</thead>
</table>

\(\text{Max}\)  

<table>
<thead>
<tr>
<th></th>
<th>120</th>
<th>51.4</th>
<th>3</th>
<th>100</th>
</tr>
</thead>
</table>

\(^*p < .05; ^{**}p < .01\)

\(^1\)’n’s vary across variables due to missing data
Table 7. Predictors of CAFAS scores at discharge (n = 89)

<table>
<thead>
<tr>
<th>Model 1&lt;sup&gt;a&lt;/sup&gt;</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAFAS scores at baseline</td>
<td>.55</td>
<td>.07</td>
<td>.53</td>
<td>7.14</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>School district</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Length of stay</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Teacher rated emotional upset</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model 2&lt;sup&gt;b&lt;/sup&gt;</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAFAS scores at baseline</td>
<td>.43</td>
<td>.09</td>
<td>.39</td>
<td>4.64</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>School district</td>
<td>-7.02</td>
<td>4.47</td>
<td>-1.13</td>
<td>-1.57</td>
<td>.12</td>
</tr>
<tr>
<td>Length of stay</td>
<td>-.28</td>
<td>.18</td>
<td>-.13</td>
<td>-1.59</td>
<td>.11</td>
</tr>
<tr>
<td>Teacher rated emotional upset</td>
<td>8.41</td>
<td>2.03</td>
<td>.35</td>
<td>4.14</td>
<td>&lt; .001</td>
</tr>
</tbody>
</table>

<sup>a</sup>R<sup>2</sup> = .28, p < .001; <sup>b</sup>R<sup>2</sup> = .40, p < .001
Appendices A – C
APPENDIX A. SBMHS School Behavior Data: CLINICIAN BASELINE

<table>
<thead>
<tr>
<th>Form completed by (Staff/Member Name):</th>
<th>Today’s Date: / /</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Name:</td>
<td>DOB: / / /</td>
</tr>
<tr>
<td>Date of Referral: / / /</td>
<td>Date of Admission: / / /</td>
</tr>
<tr>
<td>MIS# or Agency ID#:</td>
<td></td>
</tr>
</tbody>
</table>

### BACKGROUND

- **Client’s Ethnicity (Check one only):**
  - African-American
  - Asian/Pacific Islander
  - Latino
  - Native American
  - Armenian-American
  - White/Other
  - Other: ______________________
  - Unknown

- **Primary Caregiver (Check one only):**
  - Biological Parents (2)
  - Blended Family (2 parents)
  - One Parent
  - Grandparent(s)
  - Other Relatives
  - Foster Family
  - Group Home Level 1-11
  - Group Home Level 12+
  - Therapeutic Residential

- **Primary language spoken at home:** ______________________

- **Gender:**
  - Female
  - Male

### REFERRAL

- **Referral Source:** (Check all that apply)
  - Teacher
  - Principal/Other Admin Staff
  - Self
  - Parent
  - Other Caregiver
  - DCFS
  - Probation Dept
  - Other: ______________________

- **At time of referral student was enrolled in:** (Check all that apply)
  - Regular education
  - Special education
  - RSP services
  - Opportunity room
  - Community school
  - Other: ______________________

- **Has student ever received mental health services:**
  - Yes
  - No

- **At time of admission student was:** (Check all that apply)
  - On Probation
  - DCFS Involvement
  - None

- **Student was already prescribed/taking psychotropic medication:**
  - Yes
  - No

### CAFAS Scoring Summary:

1. **Role Performance:** (highest)
   - School/Work
   - Home
   - Community

2. **Behavior Toward Others**

3. **Moods/Self-Harm:** (highest)
   - Moods/Emotions
   - Self-harm behavior

4. **Substance Abuse**

5. **Thinking**

   **Total Score (sum of 1-5):**

### FUNDING

- **Source of Funding:** (Check all that apply)
  - Medi-Cal
  - Other: ______________________

- **Are services funded by AB3632 funding:**
  - Yes
  - No
## APPENDIX B. SBMHS School Behavior Data: TEACHER/COUNSELOR FORM

<table>
<thead>
<tr>
<th>Date of Referral:  / /</th>
<th>MIS# or Agency ID#:</th>
<th>Date of Admission:  / /</th>
<th>DOB:  / /</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Assessment Date:**

- [ ] Baseline
- [ ] November 15th
- [ ] May 15th
- [ ] Discharge

The District has requested that you complete this form as part of the assessment process. These ratings will provide valuable information to help the Mental Health Consortium evaluate the impact of services on the student’s school behavior. Anonymous data will also be used to help the Mental Health Consortium seek continued funding to expand services throughout the District.

### To be completed by teacher / counselor

<table>
<thead>
<tr>
<th>Teacher’s Name:</th>
<th>Grade:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Student’s Name:</th>
<th>Today’s Date:  / /</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>School:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### For each of the following questions check only one answer

**1) During the last month, how many times was the student:**

<table>
<thead>
<tr>
<th></th>
<th>Never (0)</th>
<th>Rarely (1-2)</th>
<th>Sometimes (3-4)</th>
<th>Often (5+)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Removed from class for disciplinary reasons</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Physically aggressive at school</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Threatening or intimidating at school</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Emotionally distraught or withdrawn</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

**During the last month...**

2) The student **COMPLETED** his/her **classwork**:

   - [ ] Always
   - [ ] Sometimes
   - [ ] Never
   - [ ] Don't know

3) The quality of his/her **classwork** was generally:

   - [ ] Very good
   - [ ] Good
   - [ ] Marginal
   - [ ] Poor

4) The student **COMPLETED** his/her **homework**:

   - [ ] Always
   - [ ] Sometimes
   - [ ] Never
   - [ ] Don't know

5) The quality of his/her **homework** was generally:

   - [ ] Very good
   - [ ] Good
   - [ ] Marginal
   - [ ] Poor

6) After reflecting on your responses to #1-5. Overall, please rate how the student is functioning in school:

   - [ ] Very good (no problems)
   - [ ] Acceptable (good and bad days)
   - [ ] Less than acceptable (more bad days than good)
   - [ ] Disruptive/problematic to the extent that the student was suspended or subject to disciplinary action

7) During the last month how often was the student **absent**?

   - [ ] Never (0)
   - [ ] Rarely (1-2)
   - [ ] Sometimes (3-4)
   - [ ] Often (5+)

8) During the last month how often was the student **tardy**?

   - [ ] Never (0)
   - [ ] Rarely (1-2)
   - [ ] Sometimes (3-4)
   - [ ] Often (5+)
### APPENDIX C. SBMHS School Behavior Data: QUARTERLY ASSESSMENT/DISCHARGE

<table>
<thead>
<tr>
<th>Form completed by (Staff Member Name):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Name: ________________________</td>
</tr>
<tr>
<td>DOB: M(Day) / D(Month) / Y(Year)</td>
</tr>
<tr>
<td>Today's Date: M(Day) / D(Month) / Y(Year)</td>
</tr>
<tr>
<td>MIS# or Agency ID#: ____________________</td>
</tr>
</tbody>
</table>

**Assessment Data Collected on:**
- [ ] November 15th
- [ ] May 15th
- [ ] Discharge

### REFERRAL

- Primary Caregiver: (Check one only)
  - Biological Parents (2)
  - Blended Family (2 parents)
  - Foster Family
  - Family
  - Group Home Level 1-11
  - Group Home Level 12+
  - Grandparent(s)
  - Other
  - Therapeutic Residential

At time of Quarterly Assessment, student was prescribed/taking psychotropic medication: [ ] Yes [ ] No

### CAFA S Scoring Summary:

1. **Role Performance:** (highest)
   - school/work: _________
   - home: _________
   - community: _________

2. **Behavior Toward Others**
   - Moods/Emotions: _________
   - Self-harm behavior: _________

3. **Moods/Seek-Harm:** (highest)
   - Moods/Emotions: _________

4. **Substance Abuse:** _________

5. **Thinking:** _________

### FUNDING

- Source of Funding: (Check all that apply)
  - Med-Cal
  - Other

- Are services funded by AB3632 funding? [ ] Yes [ ] No

### AGENCY/CAREGIVER CONTACT

<table>
<thead>
<tr>
<th>Services Provided</th>
<th>If “Yes” circle frequency</th>
<th>Frequency of Service Prescribed in the Service Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Session(s)</td>
<td>[ ] Yes [ ] No</td>
<td>Weekly &amp; more - Every 2 weeks - Monthly - As needed - Inconsistent</td>
</tr>
<tr>
<td>Group Session(s)</td>
<td>[ ] Yes [ ] No</td>
<td>Weekly &amp; more - Every 2 weeks - Monthly - As needed - Inconsistent</td>
</tr>
<tr>
<td>Family Session(s)</td>
<td>[ ] Yes [ ] No</td>
<td>Weekly &amp; more - Every 2 weeks - Monthly - As needed - Inconsistent</td>
</tr>
<tr>
<td>Home Visit(s)</td>
<td>[ ] Yes [ ] No</td>
<td>Weekly &amp; more - Every 2 weeks - Monthly - As needed - Inconsistent</td>
</tr>
<tr>
<td>Telephone Contact(s)</td>
<td>[ ] Yes [ ] No</td>
<td>Weekly &amp; more - Every 2 weeks - Monthly - As needed - Inconsistent</td>
</tr>
<tr>
<td>Other</td>
<td>[ ] Yes [ ] No</td>
<td>Weekly &amp; more - Every 2 weeks - Monthly - As needed - Inconsistent</td>
</tr>
</tbody>
</table>

- Level of Student Contact: Has the client been compliant with the service plan? [ ] Yes [ ] No
  - If “No” explain: ____________________________

- Level of Family/Caregiver Contact: Has the family/caregiver been compliant with the service plan? [ ] Yes [ ] No
  - If “No” explain: ____________________________

### DISCHARGE INFORMATION

- Is this a discharge summary? [ ] Yes [ ] No
  - If “Yes”, date of discharge: M(Day) / D(Month) / Y(Year)

- Reason for Discharge: (Check one only)
  - Agency/Clinical
  - Client/Student/Caregiver decision

- Status of Student Upon Discharge: (Check one only)
  - Goals achieved
  - Goals partially achieved
  - Goals not achieved
  - Status unknown
References


(2009 October 25) Retrieved on January 14, 2016 from

http://www.cdc.gov/violenceprevention/


(http://www.cdc.gov/mmwr/preview/mmwrhtml/su6202a1.htm


http://www.childwelfare.gov/can/factors/


Los Angeles County Department of Mental Health Medical guidelines. Retrieved from http://dmh.lacounty.gov/wps/portal/dmh


website:


