January 2013

School Mental Health: Views of Services Integration and Attitudes Toward Evidence-based

Donna L. Burton
University of South Florida, dburton@usf.edu

Follow this and additional works at: http://scholarcommons.usf.edu/etd

Part of the Psychiatric and Mental Health Commons, and the Public Health Commons

School Mental Health: Views of Services Integration and Attitudes Toward Evidence-based

Practice among Multiple Levels of School Personnel

by

Donna L. Burton

DEDICATION

I dedicate this dissertation to those who have provided unwavering support from the very moment I decided to pursue this Ph.D. First, I express a lot of love and a debt of gratitude to Lynne, Taylor, Dad, and Bonnie for being every bit the definition of family, for holding me up in times of stress and celebrating the successes with me. Thanks for *always* asking, "How's the dissertation coming?" regardless of the responses from the last three times you asked.

To my amazing cohort: Abraham, Claudia, Erica, Heather, Lianne, Mary, and Tara. I know without a hint of doubt that I could not have accomplished this without you. Your love and support have endured and I have been honored to discover that the late-night study groups of that first semester were only the beginning of what this group had to offer. This cohort rocks!

To a select group of friends and supportive others, Kurt Fetter, Mike Lavetsky, Dr. Massey, Arnie Miller, Dr. Poff – I deeply appreciate and thank you for being the people that I most admire. You have all in your own ways affected my life and directed my path. When I think of how high to set the bar, I think of you.

To Mom and Tom, Cheri and Aaron, and Aunt Celby and Alex – thank you for letting me know in your own ways that I had it in me to see this through.

Finally, to BLL: I could not have imagined a better match for me in an advisor and mentor. I now have a perspective on how things are supposed to happen from start to

finish in the process of *earning* a Ph.D. You have shown a capacity to persistently go

above and beyond what I expected, anticipated, or even imagined in a mentor. You made

sure that I gained the knowledge, skills, and insight that I needed to accomplish this.

There was never an option to take the easy way with you, and yet, there was also never a

time when I did not feel supported.

  To all of you - this achievement is as much yours as it is mine.

ACKNOWLEDGMENTS

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

Purpose of the study

      Through secondary data analysis of results from the School Mental Health Services Integration Survey (SMHSIS), this study describes indicators of school mental health integration preparedness, including role identification, willingness to engage in tasks associated with mental health services integration and implementation facilitators. The study also investigated the utility of a modified version of the Evidence-Based Practice Attitude Scale (EBPAS) for use with school staff.

Study rationale

      With as many as 20% of children meeting criteria for mental disorders that cause impairment, the gaps in mental health services delivery to this special needs population are evident and persistently problematic. Less than a third receive the services they need due to structural as well as attitudinal barriers to accessing services. Trends toward delivering services where children are located are noted and schools have emerged as de facto provider of mental health services to children. Yet, schools are not traditionally arranged or organized toward mental health services delivery, and though school-based mental health innovations are emerging there is no agreed upon unifying framework for integration of mental health services into school settings. Whereas school-based mental health is connecting to the evidence-base more often, evidence-based practices remain

under-utilized. The present study examines school mental health services integration

readiness in a large urban school district in central Florida.

Methods

The SMHSIS was conducted by email and participants included seven group of

professional staff, including principals and assistant principals, teachers, guidance

counselors, social workers, psychologists, school resource officers, and school health

staff. Data analysis involved exploratory factor analysis (EFA) of survey sections, in an

effort to uncover indicators of readiness for school mental health integration preparedness

in three domains, role identification, willingness, and implementation facilitators. One-

way analysis of variance (ANOVA) and post hoc tests were conducted to examine

differences in perspectives on these domains, by professional group. Finally, a multiple

regression model was used to examine the relationship between 6 predictor variables and

a single continuous dependent variable, mean scores on the EBPAS.

Results

EFA resulted in the identification of 6 variables in the domains of role

identification, willingness, and implementation facilitators. Analysis of variance

demonstrated significant differences by professional group in perspectives on these

variables. In the role identification domain, social workers, school psychologists, and

guidance counselors endorsed adoption of a provider role, and school principals and

assistance principals as a group adopted a facilitator role. Social workers and

psychologists were uniquely high and emerged as leaders in endorsing willingness to

engage in tasks associated with mental health services delivery. However, it was noted that no group endorsed a non-willing, or non-participant role. Implementations facilitators were identified in the areas of overall organizational structure, individual support, and shared professional responsibility. Finally, a summary of the regression showed that indicates that 29.0% of the variance in EBPAS scores was explained by the 6 predictor variables. The *Willingness* variable made the strongest unique contribution to predicting EBPAS outcomes. One other variable, *Shared Professional Responsibility* also made a significant unique contribution to the variance in the dependent variable, and none of the remaining four variables approached statistical significance.

Conclusions and implications

Taken together, these outcomes form the basis for a better understanding the current environment for integration of mental health services delivery in a large urban school district, and indicators for readiness to adopt evidence-based practices. Survey outcomes provide useful information to school administrators and EBP developers on characteristics that can facilitate services integration, and call attention to training and policy needs. More broadly, outcomes potentially contribute to the development of a formalized framework for mental health services delivery in schools. Finally, areas of divergence in beliefs about services delivery, as well as congruence in the attitudes of groups of professional staff have been examined. By engaging various levels and types of school staff simultaneously on a single survey, the survey design has the added value of addressing the need for more complex research methods in the investigation of mental health services in schools.

CHAPTER 1. INTRODUCTION

The critical factors converging on children's mental health provide a solid rationale for schools as a primary services delivery milieu. There is clear evidence showing schools as the prevailing de facto provider of mental health services to children (Burns, et al., 1995; Farmer, Burns, Phillips, Angold, & Costello, 2003; Leaf, Schultz, Kiser, & Pruitt, 2003). Further, children and families face a host of barriers that limit access to and resources for utilizing services through community-based providers (Langley, Nadeem, Kataoka, Stein, & Jaycox, 2010; Noam & Hermann, 2002). The largest share of children spend significant portions of their childhood in school settings, and it is within the context of schools that key markers of intellectual, physical, social and emotional development emerge (Noam & Hermann, 2002). Schools are convenient, accessible and structurally equipped to serve children and next to families, schools arguably hold the most appreciable influence over children (Atkins, et al., 1998). Taken together, these factors amount to a persuasive argument for the advancement of a clear and unifying framework to guide school mental health services research, practice, program development and evaluation, and implementation science. The dissertation research investigates the climate for school mental health services integration in a large central Florida school district, by way of secondary data analysis of a survey of school services personnel at multiple levels of administration.

Statement of the problem

Despite the need and the inherent capacity for schools to support children's mental health services delivery, school-based mental health systems are emerging slowly, owing to the lack of a unifying framework to direct research and guide the establishment of clinical practice in school settings. Partnerships between education and mental health with seeming abundant potential are as yet only modestly developed; a common language and set of shared values between school professional staff and mental health practitioners are yet to be established in widespread fashion. Although disconcerting, the fact that there is a veritable tangle of issues surrounding implementation of school-based mental health is understandable. The term mental health encompasses a spectrum from health to illness and the effectual delivery of mental health services to children in school settings requires a competent and inclusive understanding of the range of issues to be addressed. School mental health is generally viewed as targeted to those students with identifiable, diagnosable mental illnesses. However, school mental health should ideally also address the promotion of social development for all students as well as the early detection of learning problems, and interventions at the earliest onset of emotional and behavioral problems, and arguably drug abuse problems as well (Center for Mental Health in Schools at UCLA (CMHC), 2005). Because mental, emotional, and behavioral disorders tend to be progressive in their effects on the individual, family, school environment, and community, school mental health services should also direct efforts toward the attitudinal and structural barriers to learning and healthy development, and early detention and evaluation of behavioral and learning problems that are subclinical and would otherwise go unnoticed until they become problematic (CMHC, 2005).

Ideally, planning for school mental health should go even further and take into account avenues toward promotion of healthy families, enhancement of childhood resilience and protective factors, strategies to reduce systemic issues in schools that impact healthy development and learning, and the promotion of school-community partnerships that improve access to health and mental health services (CMHC, 2005).

Moreover, the provision of school-based mental health services is complex in that it requires the merging of two services silos: 1) general education curricula; and 2) mental health services. Service delivery models stemming from these silos and the professionals who represent them do not have a long-standing, shared tradition of communication and mutually enhancing program development (Burton, Hanson, Levin, & Massey, 2013). Effective approaches to school-based mental health services, however, will be propagated on the merging of systems of care including combined school and medical, school and community mental health, and school and home-based services. The ideal integrated system will represent the full continuum of care from behavioral health promotion, and pro-social development, to prevention, early intervention, treatment and crisis management (Burton, et al. 2013; CMHC, 2005).

Legislation in support of school mental health (*No Child Left Behind Act of 2001* and *Individuals with Disabilities Education Act of 2004*) emphasizes the importance of the role that schools have in supporting childhood cognitive and behavioral development, particularly for those with identified mental disorder and learning problems. Yet, the structural, programmatic, and financial challenges to mental health services integration cannot be overlooked. Problems arise because schools are not primarily organized for provision of behavioral health services, and such services therefore may not garner the

necessary status in the organizational as well as political hierarchies to be effectively implemented. The culture of most schools emphasizes instruction and academic outcomes, and naturally, the support of mental health services comes second, or somewhere further down the list, in light of the many needs competing for limited school resources. In an educational climate that emphasizes performance, as dictated by those same policies, promoting mental health services delivery may actually exacerbate implementation problems. At the school level, administrators may struggle with requirements to provide mental health services for students with various mental, emotional and behavioral disorders because the services themselves are viewed as time consuming, costly, and hard to integrate into the existing school-day schedule (Burton, et al., 2013; Langely, et al., 2010; Powers, Bowen, & Bowen, 2010). Even well-integrated services are often under-utilized by students, and this compromises their effectiveness (Yampolskaya, Massey, & Greenbaum, 2006).

The gaps in implementation of EBPs. If the task at hand were not complex enough, it is critical that school mental health interventions are grounded in evidence-based practice (EBP). Evidence-based practices are those interventions that have been proven through efficacy studies to be effective in the delivery of a health outcome. They are practices, treatment models and interventions that are empirically supported, through controlled research. There are numerous EBPs representing a broad array of children's mental health issues, including emotional and behavioral disorders of childhood, and that address various levels of service delivery from prevention to treatment. The gap between this effectiveness research and the installment or adoption of EBPs into community settings has also been widely investigated and provides an explanation, in part, for delays

4

in improvements in health care and the persistence in health disparities (Glasgow & Emmons, 2007; Kerner, Rimer, & Emmons, 2005; Lenfant, 2003). Despite federal policies enacted as early as 1998 to specifically promote implementation of EBPs in schools, more than a decade later their widespread adoption remains unfulfilled (Ringwalt, Hanley, Vincus, Ennett, Rohrbach, & Bowling, 2008; Ringwalt, Vincus, Hanley, Ennett, Bowling, & Rorhbach, 2009).

Children's mental health researchers have made great gains in developing and demonstrating the effectiveness of various interventions that result in desirable outcomes for children, such as reductions in disruptive behavior and emotional distress, attenuation of risk factors associated with drug and alcohol use, and increases in adaptive, pro-social behaviors. However, despite proven efficacy, empirically supported treatments are not widely used in clinical and community practice settings (Storch & Crisp, 2004). Questions arise about the many differences between clinical settings and research settings, the real-world conditions that can influence the degree to which interventions are beneficial and the feasibility of implementation of specific interventions. Moreover, when we consider the context of community-based service delivery settings we may find that the lab-generated EBPs have not adequately captured the complexities that arise when the child and adolescent populations served are not selected through carefully considered inclusion and exclusion criteria. The research to practice gap is the result of the multiple issues that arise when efforts are made to transport psychosocial interventions from controlled conditions to real-world practice settings. Schools face perhaps even greater challenges than other community-based settings because though

they have been identified as the prevailing de factor provider of mental health services to children, they are not primarily organized for mental health services delivery.

It has been noted that in any given year, 11-12% of children accessed mental health services through the education sector, while only 7% and 4% were served through specialty mental health and general medical settings respectively (Farmer, et al., 2003). Moreover, national surveys have also shown that fully two-thirds of schools report that they provide a wide range of mental health services, including individual and group counseling, assessment and evaluation, behavior management, case management and referral services, crisis intervention, and drug abuse and violence prevention programming (Brener, Martindale, & Weist, 2001; Foster & Jones, 2005).

However, the roles of school professional staff proving these services, such as the social workers and psychologists, are not always well-defined, and naturally center on functions that support academic objectives. For example, psychologists are tasked with evaluating special education needs, and conducting other types of assessments. In fact, fully 46-55% of a school psychologists time is spent on providing psychoeducational assessment as opposed to other activities such as delivering group level interventions (Bramlett, Murphy, Johnson, Wallingsford, & Hall, 2002; Hosp & Reschly, 2002). Other tasks include report writing, attending staff meetings and consulting with other professional personnel (Curtis, Lopez, Castillo, Batsche, & Minch, et al., 2008) These activities compete for time that might otherwise be spent on individual or group level mental health or substance abuse treatment needs of children. Further, school professional staff that offer mental health interventions are oriented toward treatment of the individuals, so group-level interventions, a category which describes a large number

of evidence-based mental health interventions that can be delivered in schools, often take a back seat.

So, though mental health services are certainly offered in schools, a wholesale commitment to implementation of evidence-based practices has not been realized. A case in point: reports from a 2005 nationally representative survey of 1,392 high school drug prevention coordinators revealed that only 10.3% were utilizing a prevention program identified as effective by the Substance Abuse and Mental Health Services Administration's (SAMHSA's) National Registry of Effective Programs (NREPP), and only 56.5% of prevention coordinators reported implementing any drug abuse prevention programming at all (Ringwalt et al., 2008). A second survey in the same year, also from a nationally representative sample, was only slightly more promising, with 42.6% of middle schools reporting use of an EBP as a drug abuse prevention strategy. However, only 23% reported that the EBP was the intervention they utilized the most (Ringwalt et al., 2009).

The same can be said of services that address mental health and emotional issues in school settings. The professions chiefly responsible for delivery of school-based mental health services (i.e. social work, psychology, school counseling, school nursing or health education) urge the use of EBPs in schools (Adams & McCarthy, 2005; Franklin & Kelly, 2009; Gambrill, 1999; Walker, 2004). Moreover, a review of the literature by Greenberg, Domitrovich, and Bumbarger (2001), revealed, "… a solid and growing empirical base indicating well-designed well implemented, school-based prevention and youth development programming, [that] can positively influence a diverse array of social, health and academic outcomes" (p.470). This was further examined by Hoagwood and

7

colleagues (2007) who reiterated the growing list of programs and interventions deemed as effective practices for school settings – also programs that address mental health and behavioral issues while promoting academic achievement. However, despite conditions agreeable to use of EBPs in schools and the array of interventions identified as effective, time and again researchers have noted that the programming utilized in schools to address the range of mental health needs of children are *not* evidence-based (Gibbs & Gambrill, 2002; Hoagwood, 2003–2004; Merrell & Buchanan, 2006; Schaughency & Ervin, 2006; Walker, 2004).

Implementation barriers. If evidence-based prevention and treatment programs are readily available, why are we not seeing their widespread adoption? Barriers to implementation are complex and as discussed are related to many competing needs for students, and the challenges faced by school staff delivering interventions. Powers et al. (2010) suggest there are significant barriers that prevent the implementation of best practices in schools, including the lack of resources, a lack of time available for training, the lack of staff to implement programs in-class, and an increasing emphasis on improving test scores. Others have also noted barriers to the use of EBPs related to the characteristics of schools, such as limited organizational support for new practices and programs, and characteristics of school staff, for example the lack of understanding of the research base supporting effective programs (Adams, et al., 2005; Bowen, Rose, & Ware, 2006; Stephan, Weist, Katoka, Adelsheim, & Mills, et al., 2007).

Characteristics of EBPs themselves have also been cited as barriers to their implementation (Adams, et al., 2005; Powers, et al., 2010). An extensive study of empirically supported, manualized and commercially available school-based programs

(Powers, et al., 2010) revealed that factors such as start-up costs, training requirements, staffing patterns and student and staff time requirement, were prohibitive to selection and implementation of EBPs. Resource requirements are often simply prohibitive to the efforts of most schools in the pursuit of empirically supported behavioral health programming for students. And, each of the competing agendas that arise with efforts to implement new behavioral health practices is a threat to education objectives in the face of growing concerns over the poor academic performance of schools.

Barriers to implementation also have their roots in the dichotomous settings of research and practice. Delays in implementation of EBPs into school-settings may be reflecting poor translation of EBPs into community settings in general. Implementation of EBPs generally is not keeping pace with the need for specialized interventions for adolescents or the development of efficacious practices. Services in community-based settings are fragmented and do not reflect specialized attention to disorders of childhood and adolescence. Access to care is limited, and often constrained by socioeconomic factors. Even those interventions for adolescents that are evidence-based have traditionally been adapted from adult interventions, and while they may show some effect with adolescents, there remain significant gaps in the delivery of services to children and adolescents (Weisz & Hawley, 2002).

The problem of unmet need is not merely attributed to a rise in the prevalence of mental disorders and substance abuse in childhood, but is inherently a services delivery problem complicated by the lack of sufficient avenues for translation of EBPs into community settings, and schools in particular. Despite recent attention afforded to the development of EBPs and an increasing supply of empirically qualified treatment and

prevention programs, there is little evidence of effective implementation in community settings (Proctor, Knudson, Fedoravicius, Hovmand, & Rosen, et al., 2007). Whereas EBPs are not lacking, proven strategies for implementation are (Drake, Essock, Shaner, Carey, & Kenneth, et al., 2001; Glisson & Schoenwald, 2005). Perhaps the single most pivotal factor that is missing in the development of implementation strategies is "effective communication between research producers and research users" (Walter, Nutley & Davies, 2005). If schools are not chiefly arranged around the delivery of mental health services, they are considerably less prepared than other community-based settings to be in the business of mental health services delivery. Of course, many schools and school districts would likely agree that they are not or should not be in the business of providing mental health services, and this in itself is a barrier.

Research into the integration of mental health services in schools is cross-cutting. It investigates characteristics of schools as service delivery settings. Also, from the perspective of implementation science, research in this area evaluates the nuances of the uptake and translation of behavioral health practices into services settings. Translational research is itself also cross-cutting in that is seeks to investigate multiple levels of readiness for implementation, from the individual service provider, to administrative personnel, to the readiness of the organization itself. Problems surrounding organizational structure and readiness for implementation of new practices must necessarily become an integrated tier of investigation in addressing school mental health services delivery.

The dissertation research is an effort to tease out elements of the complex nature of implementation of mental health services in schools and look at specific associations

between respondent characteristics and the readiness of one school district to integrate services. Specifically, this research will investigate, through secondary data analyses of a survey of professional staff of the School Board of Hillsborough County, respondent perspectives on organization and delivery of behavioral health services. This will include professional role identification, willingness to be involved in specific tasks related to services delivery, facilitators to services delivery, and the attitudes of respondents toward the implementation of evidence-based practices.

Purpose of the Study

The survey was uniquely designed to query multiple types and levels of professional staff simultaneously. This was done in order to address limitations of historical school mental health services delivery research in which the focus was on a profession (e.g. school social workers, psychologists, or teachers) (Atkins, Frazier, Leathers, Graczyk, & Talbott, et al., 2008; Kratochwill, 2007; Kratochwill & Shernoff, 2004; Suldo, Friedrich, & Michalowski, 2010), or a specific type of respondent (e.g. administrators) (Langely, et al., 2010).

    Aims. The research study has three main aims:

1. To describe indicators of mental health integration preparedness and assess differences in their perception by professional group. Survey items addressed school staff beliefs about mental health services integration formed around constructs including the *roles* taken by school personnel in the implementation in mental health services, the *willingness* of school personnel to become engaged in mental health integration activities, and *facilitators* to services integration. Aim 1 Research questions are:

- What factors are produced on each of three scales measuring Role Identification, Willingness, and Implementation Facilitators?

- Are there significant differences in role identification by professional group?

- Are there significant differences in willingness to engage in tasks associated with services delivery by professional group?

- Are there significant differences in the perception of facilitators to mental health services integration by professional group?

2. To investigate the utility of a modified version of the Evidence-Based Practice Attitudes Scale (EBPAS) for use with school staff respective to school mental health services. The EBPAS is a scale that was developed to assess attitudes of providers in mental health service settings toward the adoption of evidence-based practices (Aarons, 2004; Aarons, McDonald, Sheehan, & Walrath-Greene, 2007; Aarons, Glisson, Hoagwood, Kelleher, Landsverk, & Cafri, G. et al, 2010). According to Aarons, et al (2010):

> The EBPAS comprises these four subscales: *Appeal* (measuring the intuitive appeal of EBPs), *Requirements* (assessing the likelihood of adopting EBPs given requirements to do so), *Openness* (measuring openness to new practices), and *Divergence* (assessing perceived divergence between research-based/academically developed interventions and current practice). (p. 357)

12

The scale has been used in the development of models for implementation of best practices and in evaluating readiness of service providers to adopt new innovations (Aarons, et al, 2010). Studies utilizing the EBPAS have assessed organizational structure and policies, organizational context, culture and climate, (Aarons, 2005; Aarons & Sawitzky, 2006), and to examine associations between leadership and provider attitudes toward adoption of EBPs (Aarons, 2006).

The *Evidence-Based Practice Attitudes Scale* (EBPAS) (Aarons, 2004) was modified slightly with permission from the author, and appended onto the larger survey. Modifications were intended to address language specific to the setting and population. The research question for Aim 2, then is simply,

- Are there significant differences in outcomes on the EBPAS for this group of respondents, by professional group?

3. To better understand indicators of readiness to adopt evidence-based practices among multiple levels of school staff. The EBPAS was selected for use with this survey to examine relationships, if any, between the general notions of school staff related to mental health services integration (i.e. role identification, willingness, and perception of implementation facilitators) and their attitudes toward the adoption of evidence-based practices specifically. The research question for this third aim is:

- Which variables from the SMHSIS are associated with higher outcomes on the EBPAS?

Taken together, these aims form the basis of a better understanding the current environment for integration of mental health services delivery in a large urban school

district. Survey outcomes provide useful information to school administrators and EBP developers on characteristics that can facilitate services integration, and call attention to potential barriers, as well as training and policy needs. More broadly, outcomes potentially contribute to the development of a formalized framework for mental health services delivery in schools. Finally, by engaging various levels and types of school staff simultaneously on a single survey, the survey design has the added value of addressing the need for more complex research methods in the investigation of mental health services in schools. Areas of divergence in beliefs about services delivery, as well as congruence in the attitudes of groups of professional staff have been examined.

Rationale for the Study

As discussed, there are significant problems with the mental health services delivery system when youth are concerned. Fully 20% of children meet criteria for some form of mental disorder that impairs daily functioning (Belfer, 2008; Canino, Shrout, Rubio-Stipec, Bird, & Bravo, et al., 2004; Leaf, et al., 2003; Marsh, 2004, &, USDHHS, 1999), and only about a third of those in need of mental health care receive services (Marsh, 2004; Leaf, et al., 2003). Specialty mental health interventions are offered in only 20% of the cases where they are needed   (Kataoka, Zhang, & Wells, 2002). For those children who do receive mental health services, most receive them in schools (Burns et al., 1995; Farmer, et al., Kutash, Duchnowski, & Lynn, 2006). This scenario essentially forces the hand of schools to ready themselves for mental health services delivery and to some extent reconfigure organizational structure and school culture to

account for school-based mental health as a core function of school operations. The issues surrounding school mental health services delivery are complex and whereas we are striving to understand and mitigate them by forward progress toward integrated services delivery, the principle problem remains: there is a significant and persistent gap between the need for children's mental health services and their provision in the United States. We can begin to close this gap by investigating avenues to integration of behavioral health services into schools, capitalizing on the benefits of delivering these services in settings convenient and accessible to youth.

CHAPTER 2. LITERATURE REVIEW

Investigation of the integration, implementation, and delivery of mental health services brings together a range of research sub-specialties: epidemiology of childhood mental illness, service use data, the history of barriers and facilitators to school mental health including the use of evidence-based practices, and the nature of implementation science and translational research and the nuances of these as they apply to school settings. This brief review represents an effort to gather and integrate literature from these areas as one step in the development of a framework for school mental health services implementation.

Epidemiology and Service Use Data

The magnitude of child and adolescent mental health problems continues to challenge resources globally. Understanding the scope of mental disorders of childhood and the burden of disease involves examining the prevalence of disorders and their impact, as well as the gaps in services delivery, the economic costs to families and communities, and the costs to the individual young person in terms of lost potential (Belfer, 2008). Gathering data to strengthen epidemiology of children's mental health is exceptionally complex. The difficulty in measuring gaps in services delivery is a reflection of the difficulty in appropriately assessing, diagnosing, and pinpointing the impact on functioning respective to a wide variety of mental disorders of childhood,

within the context of the range of markers of "natural" childhood development. Facets of this complex nature of epidemiology of children's mental health have been described. First, mechanisms for gathering consistent epidemiological data that is meaningful across demographic and cultural groups of children and adolescents are noticeably absent (Belfer, 2008).

Second, whereas impairment to routine functioning is a consistent criterion across virtually all forms of mental illness, in children and adolescents there is no agreed upon framework or measure when it comes to assessing and describing impairment. Degree of impairment can vary widely within the context of a child's culture as well as environmental supports, or lack thereof (Belfer, 2008). If we understand impairment in childhood as being the absence of adaptive functioning for the child's stage of development and cultural context (Canino, Costello, & Angold, 1999), then measures of impairment must be culturally-specific and sensitive to the latitude we apply in describing "normal" development. Determinations of degree of impairment must be contextually relevant.

Third, the study of epidemiology of childhood mental disorders is largely predicated on service utilization. Indexing the full range of services that could potentially be accessed or offered across service sectors is complicated. Invariably the mental health needs of children are not respecters of service-sector boundaries. Problems are all too often first identified in systems outside health and mental health environments, for example in juvenile justice, education, and social services settings (Burns, et al., 1995), where children are more likely to utilize services than through specialty mental health providers (Ford, 2008). In fact, an estimated 70-80% of children's mental health services

17

are offered in schools (Burns, et al, 1995). This is a problem in and of itself, but also contributes to the difficulty in collecting and aggregating data. The more targeted or specialized the service, the less likely it is to be included in translatable systems for correlating data. Community surveys across regions of the U.S. have served to fill some of the gaps in the epidemiology of mental disorders in children but there is still a dearth of data from nationally representative samples that provide insight into the distribution and prevalence of DSM-IV diagnoses in children and adolescents (Achenbach, 2005; Costello, Egger, & Angold, 2005; Hudziak, Achenbach, Althoff, & Pine, 2007; Marsh, & Hunsley, 2005; Merikangas, He, Burstein, Swanson, & Avenevoli, et al., 2010a). In sum, "The majority of studies assess older children and adolescents and lack uniformity in diagnostic measures, impairment criteria, time frames, and informants" (Green-Hennessy, 2010, p. 202).

Finally, service use data is a key to generating epidemiological data. Whereas anywhere from 12-22% of all persons under the age of 18 are in need of interventions to address mental, emotional, and behavioral problems, national data has revealed that fully 80% of those who need services do not receive them (Kataoka, et al., 2002; U.S. Public Health Service, 2000). As noted, children's mental health services tend to be utilized most outside the mental health sector and, most often, services are offered through schools (Bradshaw, Buckley, & Ialongo, 2008; Canino et al, 2004; Farmer, et al., 2003). When services are accessed through specialty community providers, they are more likely to be accessed through outpatient versus inpatient venues (Pottick, Warner, Issacs, Henderson, & Milazzo-Sayre, et al., 2004), with trends toward a decrease in inpatient

length of stay, (Case, Olfson, Marcus, & Seigel, 2007) and relatively brief episodes of outpatient treatment (Farmer, et al, 2003).

Though barriers to gathering epidemiological data are evident, so too are recent concerted efforts toward data collection. The field of the epidemiology of mental disorders in childhood and adolescence has seen considerable growth in the U.S. and abroad over the past two decades, providing data on the incidence and prevalence of childhood mental, emotional, and behavioral disorders. Federally-driven data collection efforts along with a rise in community-based studies to gather data on rates of mental disorders in children have enriched the database.

According to the U.S. Department of Health and Human Services (2009), among 9-17 year olds, approximately 21% meet diagnostic criteria a mental or addictive disorder. Subsequent studies of children in the U.S., utilizing both structured clinical interviews (Roberts, Roberts, & Xing, 2007) and mental health screening measures (Brown, Riley, & Wissow, 2007) support these estimates, and have revealed prevalence rates of 17% and 21%, respectively. Moreover, one in five children globally will experience some form of mental illness and one in ten will struggle with the impact of a serious emotional disturbance (SED) (Belfer, 2008; Canino, et al, 2004; Costello, et al., 2005; Romano, Tremblay, Vitaro, Zoccolillo, & Pagani, 2001). An SED is a mental, emotional, or behavioral disorder of childhood that results in significant functional impairment. As many as 5% of all children will experience *extreme* functional impairment as the result of a mental disorder (U.S. Department of Health and Human Services, 2000). When the wide array of childhood mental health conditions are

considered, as many as one-quarter of the population will have a mental disorder in any 3- to 6-month time frame (Costello, Foley, & Angold, 2006).

Onset of many categories of mental disorders is highest between adolescence and early adulthood (Patton, Hetrick, & McGorry, 2007), and the presence of these disorders in childhood is a clear predisposing factor to a variety of subsequent problems in late adolescence and early adulthood. This is particularly noted for the later use of illicit drugs (Buckner, Schmidt, Lang, Small, & Schlauch, et al., 2008, Hayatbakhsh, McGee, Bor, Najman, & Jamrozik, et al., 2008, Swadi, 1999). Further, there is a noted distinction between child and adolescent mental disorders, and mental disorders in children and adolescents. Whereas, according to the Diagnostic and Statistical Manual of Mental Disorders, (DSM-IV-TR) (APA, 2000), there are specific mental, emotional, and behavioral disorders that first appear in childhood, there has also been a steady decline in recent years in the age of onset for mental disorders that have historically occurred later in life (Costello, Mustillo, Keeler, & Angold, 2004). A host of chronic conditions that heretofore were considered to have their onset sometime in adulthood are appearing earlier and earlier in the lifespan. Recent studies have in fact demonstrated that serious mental health conditions can occur even among toddlers and preschoolers (McDonnell & Glod, 2003; Skovgaard, et al., 2007).

Smaller community population studies got the ball rolling on meeting epidemiology needs in children's mental health, but the absence of nationally representative studies remained problematic. The landmark Surgeon General's Report on Mental Health in 1999 (U.S. Department of Health and Human Services, 1999), along with the Report of the Surgeon General's Conference on Children's Mental Health: A

National Action Agenda (USDHHS, 2000) served as a catalyst for initiatives by the

National Institute of Mental Health to address the limits of research into child and

adolescent mental health, and for researchers to examine data from nationally

representative samples. Kataoka, Zhang, and Wells (2002) looked at rates of mental

health problems and found that 15-21% of children ages 6-17, representing more than

11,500 U.S. households across three nationally representative, cross-sectional samples

were assessed as having a mental disorder.

Subsequent national-level surveys followed. Instruments were added to existing

large national surveys, to better assess prevalence of mental disorders in a large

population of children. The Strengths and Difficulties Questionnaire (SDQ) was included

in the National Health Interview Survey (NHIS), and selected assessment modules from

the NIMH Diagnostic Interview Schedule for Children were added to the National Health

and Nutrition Examination Survey (NHANES). Additionally, the National Comorbidity

Survey-Adolescent Supplement (NCS-A), a survey of a nationally representative sample

of youth ages 13 to 18, was developed as an extension of the National Comorbidity

Survey Replication (NCS-R) (Merikangas, et al., 2010b).

Data from the NCS-A reveals that when lifetime prevalence is measured, anxiety

disorders are by far the most prominent of mental disorders of those disorders surveyed in

this study (mood disorders, anxiety disorders, behavior disorders, substance use

disorders, and eating disorders), with a 31.9% prevalence rate (38.0% for girls and 26.1%

for boys). The survey queried for several different types of anxiety disorders, including

agoraphobia, generalized anxiety disorder, social and specific phobias, panic disorder,

posttraumatic stress disorder, and separation anxiety disorder; specific phobia represents

the most common anxiety disorder by far (22.1% total prevalence rate across gender and age) (Merikangas, et al., 2010b).

The NCS-A also revealed a total prevalence rate of 14.3% for any mood disorder, with a depressive disorder being about 4 times more likely than a bipolar mood disorder (11.7% compared to 2.9%) and any mood disorder being nearly twice as likely for females as for males (18.3, compared to 10.5%) (Merikangas, et al., 2010b).

As mentioned earlier, there is a distinction between mental disorders that are expected to first appear in childhood versus other mental disorders that typically occur in adulthood but may have an early onset in childhood. NCS-A data (Merikangas et al., 2010b) data reveal to some intrigue that Behavior Disorders, including Attention-Deficit Hyperactivity Disorders, Oppositional-Defiant Disorder, and Conduct Disorder, all of which are arranged in the DSM-IV as mental disorders first diagnosed in childhood, are considerably less prevalent than anxiety disorders in children and adolescents (19.6% compared with 31.9%) and only modestly more prevalent than mood disorders (19.6% compared with 14.3%). However, it is also noted that when accounting for measures of impairment, mood disorders are somewhat more likely to be debilitating, with 11.2% of all children surveyed meeting criteria for severe impairment for mood disorders, compared with 9.6% and 8.3% for behavior and anxiety disorders respectively (Merikangas, et al., 2010b).

Whereas the NCS-A study measured lifetime prevalence, the NHANES study provided data for 12-month prevalence rates; a distinction was made for cases with severe impairment, with ratings from 6 questions on personal distress as well as social

and academic problems (Merikangas, et al., 2010a). Twelve-month prevalence rates, as reported from the NHANES study showed total rates for the following disorders (with severe impairment prevalence rates in parentheses): 8.6% (7.8%) for ADHD, 2.1% (1.7%) for Conduct Disorder, .7% (.4%) for any anxiety disorder, 3.7% (2.9%) for any mood disorder. Total 12-month prevalence rates for all disorders was 13.1%, with 11.3% meeting criteria for severe impairment (Merikangas, et al., 2010a).

The NHANES study has offered some indication that service utilization rates for mental health services among children with a range of disorders is improving. The 12-month mental health service use, described as a child having been seen in a hospital, clinic or office to address the study-identified disorders, ranged from 32.3% (for anxiety disorders) to 47.7% for ADHD, with an overall 12-month service use rate of 50.6% (52.8% for those with severe impairment) (Merikangas, et al., 2010a).

Not unlike the concern over the incidence of mental disorders of childhood, there is growing concern over the incidence of drug abuse and the childhood precursors to drug abuse and mental disorders in middle to late adolescence (USDHHS, 2007). The National Institute on Drug Abuse (NIDA) has been tracking youth drug abuse trends since 1975 through the Monitoring the Future Survey (MTF), administered annually to 8th, 10th, and 12th graders (USDHHS, 2009). In 2005, 27% of 12th graders reported having used at least one illicit drug other than marijuana, 33% reported past year use of marijuana, and 28% acknowledged binge drinking in two weeks prior to the survey (USDHHS, 2006). Data representing the most recent survey from 2007-2008 suggests decreases or stability in patterns of use and abuse for most categories of drugs. However, there is persistence of chronic drug abuse in a small yet sizeable fraction of teens (e.g., 5% of 12th graders are

daily marijuana users), a level unchanged since 2001 (Johnston, O'Malley, & Bachman, 2008). Despite declines or stability in some areas, drug abuse among adolescents remains a concern for the nation. The NCS-A study revealed an 11.4% prevalence rate for any substance use disorder (abuse or dependence) among 13-18 year olds and noted that a diagnosis of substance abuse and/or dependence inherently speaks to some degree of impairment in routine functioning (Merikangas, et al., 2010b).

The NCS-A study demonstrated that when all categories of disorders (excluding eating disorders) are considered, nearly half (49.5%) of all children and adolescents surveyed met criteria for at least one disorder, with 27.6% assessed as having severe impairment. Moreover, 12.4% met criteria for two classes of disorders, and 6.9% for 3 or 4 classes of disorders (Merikangas, et al, 2010b), a diagnostic condition known as comorbidity. NHANES data also spoke to patterns of comorbidity with significant associations between conduct disorder and ADHD, mood disorder and ADHD, and mood disorder and anxiety disorder (Merikangas, et al, 2010a).

Demographically, NCA-S data show few differences along racial and ethnic lines, with some noted exceptions: anxiety disorders were more prevalent among non-Hispanic Black adolescents, while substance use disorders were less prevalent for this group when compared with non-Hispanic White counterparts. Higher rates of mood disorders were noted among Hispanic adolescents when compared with Non-Hispanic Whites (Merikangas, et al, 2010b). Interestingly, poverty and urbanicity were not correlated to any class of major mental disorder in the NCS-A study, though research has historically demonstrated the links between poverty and social-emotional difficulties in children and can extensively influence psychosocial development (Atkins, Frazier, Adil, & Talbott,

24

2003; Wadsworth & Achenbach, 2005). On the other hand, NHANES data showed that youth with low poverty Index Rate (PIR) had higher rates of any 12-month disorder (Merikangas, et al, 2010a).

The NCS-A and NHANES data represent the first large nationally representative surveys of lifetime prevalence of mental disorders among adolescents. These data also affirm prior research on early onset of these major classes of disorders in children (Cohen, et al., 1993; Kim-Cohen, Caspi, & Moffitt, 2003; McGee, Feehan, &Williams, 1992;); for adolescents meeting criteria for an anxiety disorder, 50% experienced onset by the age of 6, corresponding to 11 years of age for behavioral disorders, 13 for mood disorders and 15 for substance use disorders (Merikangas, et al., 2010b).

Impact on School Performance

It is important to grasp the scope of the problem of childhood onset of mental, emotional, and behavioral disorders as it relates to and impacts psychosocial, cognitive, and physical development. Further, the relationship between emotional and behavioral disorders and decreased academic achievement is well documented in the literature. Children with emotional challenges earn lower grades and more often perform below grade level when compared with their peers; they are more likely to fail courses and have higher rates of school drop-out (Kaufman, Alt, & Chapman, 2004; Reid, Gonzalez, Nordness, Tout, & Epstein, 2004). Reading has been identified as the area of chief concern, though students with emotional disabilities are shown to have deficits across all academic content areas (Trout, Nordness, Pierce, & Epstein, 2003). Generally speaking, students who experience emotional and behavioral challenges are more likely to

experience unsuccessful outcomes where academic achievement is concerned and this correlates to limited post-secondary educational experiences (Trout, et al., 2003). It stands to reason too, that instruction in required grade-level curricula is compromised, or may even be abandoned by educators who must focus the greater share of their attention on remediating student behavioral challenges in the classroom (Barton-Arwood, Webby, & Faulk, 2005).

Local Data

Hillsborough County is situated near the west coast of central Florida and comprises 1,051 square miles and, as of 2010, had a population of approximately 1.3 million, 17% of whom are school-aged children and adolescents (National Association of Counties, 2012).

The School District of Hillsborough County (SDHC) is comprised of the city of Tampa and the surrounding county, and is home to approximately 200,000 students – the third largest school district in Florida and the eighth largest nationally. It consists of 254 schools for grades K-12 (142 elementary schools, 44 middle schools and 27 high schools), including charter schools, and Exceptional Student Education Centers. Forty-four percent of students in the school district are White/Non-Hispanic, 26% are Hispanic, 22% are Black/Non-Hispanic, 5% are Multiracial, 3% are Asian/Pacific Islander, and 0.3% is American Indian/Alaskan Native (Hillsborough County Public Schools, 2010).

Hillsborough County Schools have documented rapid growth of high student mobility and other risk factors, such as high poverty and teen pregnancy rates. Over half of School District of Hillsborough County students (57%) are eligible for free or reduced

lunch programs. The SDHC has also identified students deemed to have a high need for mental health services, namely those 600 students placed in foster care and approximately 1,000 students being supervised through juvenile justice probation (HCPS, 2010). Fewer than one-third of the estimated 3,500 students in special education due to emotional disturbances receive mental health services. For those who do, just 12 local community agencies offer the 22 different services presently provided (HCPS, 2010).

Owing largely to a mental health services integration grant received three years ago by the school district, considerable progress has been made in the integration and use of these services for all students. Positive outcomes of that effort have been cited by SDHC and include: (1) improved awareness of teachers of the resources available to students with mental health needs; teachers were trained on a new protocol for accessing information about these resources; (2) improvements in protocols for the transition of students back to school following discharge from the Children's Crisis; and (3) participation of SDHC personnel on the Hillsborough Local Mental Health Planning Team (HLPT), which provides a mechanism for promotion and sustainability of new mental health services protocols implementation. Though progress has been marked and the 18-month planning grant for SDHC's very large services delivery system, administrative staff recognize there is still much to accomplish in refining and advancing an integrated system of mental health services for students in Hillsborough County. Moreover, there is an estimated 5% annual growth rate of students referred for special education placement due to emotional disturbance in Hillsborough County Schools, and an estimated 70,000 instructional hours lost to suspension of students with emotional and behavioral problems (HCPS, 2010).

In the Tampa Bay area, data on drug and alcohol abuse among children and adolescents do not reflect national trends toward stability. The Florida Youth Substance Abuse Survey (FYSAS) reported in 2009 that students' past 30-day drug use in Hillsborough County increased from 2006 to 2008 in three major categories of drugs: 1) alcohol; 2) marijuana; and 3) illicit drugs other than marijuana (Florida Department of Children and Families, 2009). Overall rates of use of any form of alcohol or illicit drugs increased by nearly 5% for Hillsborough County, despite decreases statewide (FDCF, 2009). In response to known vulnerability to alcohol and drug-related accidents among young adults, the FYSAS also reviewed autopsy reports from the Hillsborough County Medical Examiner's office for all accidental deaths of persons 15-24 years old in 2006. A notable 43% and 31% of autopsy reports mentioned alcohol and illicit drug use respectively.

The growing epidemic of youth drug abuse in the Tampa Bay area is further underscored by increasing rates of service utilization. Despite decreases in adult admissions to all levels of treatment (residential, outpatient, and detoxification) from 2006 to 2008, there have been increases in admissions for children to these services in both Hillsborough and Pinellas Counties. Total admissions of children to residential and detoxification services for these two counties, from 2006 to 2008, increased by 6.7%, and 7.3% respectively. Only outpatient admissions of children decreased (3.5%) during this same period of time (FDCF, 2009).

The School Board of Hillsborough County acknowledges that the capacity meet the behavioral health needs of a significant number of children is not sufficient, and has documented its commitment to the development of "mechanisms that can produce

effective collaboration between schools and community provider agencies to increase

capacity of and access to needed services… to ensure and improve the emotional

development of all students" (HCPS, 2010, p.1).

History of School Mental Health Services Delivery

Schools have become critical organizational settings for the delivery of mental

health and behavioral services for students, in large part promulgated on legislation

initiated in the mid to late 1960's. It is no accident that this push in policy development

coincided with deinstitutionalization and a call for delivery of mental health services in

community settings. What was occurring in the arena of mental health services delivery

generally, set the stage for the evolution of school health programs to include mental

health services (Burton, et al., 2013).

Moreover, the inadequacies and limited availability to serve the mental health

needs of children in traditional community mental health settings over the past fifty years,

have resulted in national policy development and reform establishing school settings as a

primary venue for child and adolescent mental health interventions (Burton, et al., 2013).

In 1964, the National Institute of Mental Health (NIMH) published a major

monograph on school mental health. *The Protection and Promotion of Mental Health in

Schools* (Lambert, et al.,1965) became a policy benchmark and served as a catalyst for

major efforts and program initiatives to expand clinical and prevention services in

schools. Public Law 89-10, the *Elementary and Secondary Education Act of 1965*

(ESEA), was one of the most far-reaching federal legislative acts affecting education.

ESEA emphasized equal access to education by addressing achievement gaps between

students by increasing opportunities to achieve education with in-school supports (McDonnell, 2005). The notion of expanded services to children who do not have SEDs and who do not require special education services was reiterated under the Bush administration in 2001 with passage of **Public Law** 107-110, the *No Child Left Behind Act* (NCLB), which expanded and re-authorized the *ESEA* (McDonnell, 2005).

Public Law 94-142, the *Education for All Handicapped Children Act of 1975* (EHA), was the culmination of significant efforts to enact legislation requiring schools to serve all children with disabilities and among them, children with SEDs. Prior to the EHA, only one out of five children with disabilities received schooling through the public education system. In fact, a number of state laws excluded children with certain disabilities from attending public school, including explicit exclusions for children identified as "emotionally disturbed" or "mentally retarded" (West et al., 2000). EHA was re-authorized with expanded protections in 1997 and in 2004. The important revisions found in the re-authorization included the provision of mental health services to all children, whether or not they had SEDs, and counseling provided to parents to further their understanding of the nature of a child's particular disability (West et al., 2000).

In 1990, Public Law 101-476, the *Individuals with Disabilities Education Act* (IDEA), provided for governance as to how states and public agencies deliver special education services, including mental health services to children with disabilities. The IDEA and related policy efforts provide for widespread adoption of special education services for all children with disabilities (IDEA, 2004).

In 1995, the Health Resources and Services Administration (HRSA) and the Maternal Child Health Bureau (MCHB) introduced the *Mental Health in Schools*

Program, a concerted effort toward advancement of mental health services in schools. The emphasis of the *Mental Health in Schools Program* centered on increasing capacity for schools and communities to jointly address the mental health and psychosocial needs of students. Two national centers (Center for School Mental Health Analysis & Action and the Center for Mental Health in Schools) were established in 1995 to provide technical assistance and training (Anglin, 2003). Both the *Mental Health in Schools Program* and its Centers were renewed in 2000 and in 2005. In addition, other organizations, such as the *Research and Training Center for Children's Mental Health* in the Louis de la Parte Florida Mental Health Institute at the University of South Florida, and the *Center for Child and Human Development* at Georgetown University, have emerged as major research centers advancing school mental health services. They serve as major hubs for the collection, cataloguing, and dissemination of information on school-based mental health research (Commission on Youth, 2011).

In 1999, the U.S. Departments of Education, Health and Human Services, and Justice announced the *Safe Schools/Healthy Students Initiative*. This federal grant program was developed to promote the health and safety of students by comprehensively addressing the social, behavioral and mental health issues of public school students. This program was unique because it involved the cooperation and joint funding of the three U.S. Departments and required the use of comprehensive, evidence-based programs to support the healthy development of students. It emphasized ongoing cooperation between schools and community providers (Anglin, 2003).

Implementation of School Mental Health Services

"Education and mental health integration will be advanced when the goal of mental health includes effective schooling and the goal of effective schools includes the healthy functioning of students" (Atkins, Hoagwood, Kutash & Seidman, 2010, p. 40). Whereas we may see the occasional model school district wherein a mutually enhancing agenda such as this has been realized, the fact remains that schools and mental health providers are divergent when it comes to perspectives on mental health integration. Agencies and providers concerned primarily with children's mental health advance an agenda whereby meeting the mental health needs of children and families is facilitated by the school setting. The perspective of schools on the other hand, is that student mental and physical health is essential to good school performance, but with the clear emphasis on academic supports as the underlying mission of the school environment (CMHC, 2006a). The bridging of these perspectives is the goal of school mental health integration with implications for a broader spectrum of mental health interventions offered in schools, their enhanced effectiveness, early identification of both mental health and academic problems and their solutions, reduction of stigma, and school wide promotion of healthy emotional development and optimal academic performance, in equal measures.

The recent federal mandates, incentives, and policy initiatives discussed above in the history of school mental health are contributing to the increased commitment of schools to provide mental health services. However, with the increased attention to school mental health and an enhanced data base stemming from research in this area, school administrative and professional staff cannot ignore the sheer numbers of students whose academic progress is in peril due to their mental, emotional, or behavioral health

status. Never mind that 20% of children are in need of mental health services (USDHHS, 1999), with 11% of all children showing significant impairment in tasks of daily functioning and 5% experiencing extreme functional impairment. When problems outside the realm of categorized or diagnosable disorders are accounted for and specifically those psychosocial problems that impact school functioning, an estimated 40% of youth are in "bad educational shape" (CMHC, 2006b, p.6). In urban areas, in excess of 50% of students experience significant emotional and behavioral problems, inclusive of learning problems (CMHC, 2006b).

The building of solid foundation on which to construct a unifying framework for school-based mental health is dependent on pervasive understanding of school and mental health perspectives.

An educational perspective on school-based mental health. The fundamental mission of schools is education. This point is not contested. While policymakers focused on school performance may agree that students do better academically when they are mentally and emotionally fit, performance accountability pressures can offset attention to any other matter that competes with instructional processes and test scores (CMHC, 2006b). Simply put, for school leaders, schools are not fundamentally or principally in the mental health business. However, schools have become primary providers of a range of mental health services, as previously discussed, and school leaders therefore find themselves in the unenviable position of balancing core instructional operations with a school-based mental health services agenda. Prevailing models for school-based mental health do this with varying degrees of success.

Mental health services delivery within schools is essentially driven by a tier approach to the provision of three chief functions: prevention; intervention; and treatment. *Prevention* services target the widest range and largest numbers of students. The multiple aims of school-based preventions services include social skills development, health promotion, management of interpersonal conflict, reductions in risk-taking behavior, and the instilling of a host of problem-solving and decision-making skills. Prevention programs are generally understood as appropriate for all students and not meant to be offered in response to developing or apparent individualized problems. These services may be offered by a variety of school staff in varied locations ranging from afterschool events provided by resource specialist and health education staff, screenings offered by a school nurse, to classroom activities offered by teachers. *Intervention*, on the other hand is meant to target the next tier, a smaller group of students for whom the emergence or development of a problem is apparent or imminent, or who are not progressing according to anticipated developmental milestones. Schools provide counseling interventions and supports for those children who may need help in overcoming life problems or setbacks or who require specialized assistance with specific developmental tasks. Interventions are typically offered by a range of health and mental health professionals, including guidance counselors, school psychologists and social workers, school nurses, guidance counselors, and other health staff. Often, such interventions become embedded within the school routine such that they are not recognized as targeted mental health services (CMHC, 2006b.)

Finally, schools often find themselves in the position of offering mental health *treatment* services to a small group of students who require a more intensive level of care

due to the presence of diagnosed mental, emotional and behavioral disorders that are causing impairments in the tasks of day to day functioning. School professional staff provide treatment services in a variety of ways. Students and their families may be referred to community resources where they receive specialized and targeted treatment protocols. Or, they may be offered services at school by school-based social workers and psychologists who provide assessment, testing and therapeutic interventions. Additionally, youth in this category of need are often placed in rehabilitative services provided at school through a mandated individualized education program (IEP). IEPs are be offered through academic and behavioral supports provided within the mainstream activities of the school day, or in some cases they are provided to small groups of students in an entirely self-contained classroom setting. They are provided by special education teachers and professionals in concert with school mental health staff.

Regardless of the fundamental academic orientation of schools, they are gearing up in significant numbers to adapt to the growing mental health needs of students. In the early 1990's, the professional-to-student ratio for school social workers and psychologists was estimated to average 1 per 2,500 students, and 1 to approximately 1,000 students for school counselors (Carlson, Paavola, & Talley, 1995). By 2000, a study conducted by the National Center for Chronic Disease Prevention and Health Promotion revealed that 77% of schools had a full or part time guidance counselor, 66% employed a school psychologist either full or part time and 44% had a designated school social worker, either full or part time (CDC, 2000). Advances continued and by 2006 72% of elementary schools, 82% of middle schools and 88% of high schools employed school counselors, full or part time (CDC, 2006). Percentages of elementary, middle, and high

schools employing school psychologists and social workers held steady, but dedicated phone lines for mental health and social services increased from 38% in 2000 to 51% in 2006 (CDC, 2006). Moreover, as mental health services have become more formalized, indicators of policy development are noted. The CDC reported that by 2006 62% of school districts and 45% of schools had formal contracts or memoranda of understanding with community-based providers for the delivery of mental health services to students. Moreover, by the 2006 survey noteworthy numbers of schools were requiring professional staff to have a minimum of a master's degree (75%, 79%, and 64% for counselors, psychologists and social workers respectively) (CDC, 2006). These numbers demonstrate that schools are increasingly dedicating resources to build personnel resources around which effective mental health services delivery can be implemented.

A mental health perspective on school-based mental health. Two major research centers are largely responsible for the collection, cataloguing, and dissemination of information pertaining to advances in school mental health services and research: The National Center for Mental Health in Schools (NCMHIS) Project of the Program and Policy Analysis Center at the University of California at Los Angeles, and the Center for Child and Human Development at Georgetown University. These centers were established in 1995, with the *Mental Health in Schools Program* a concerted effort toward the promotion of school-based mental health initiated by the Health Resources and Services Administration (HRSA) and the Maternal Child Health Bureau (MCHB). The chief aims of the *Mental Health in Schools Program* were to increase capacity for schools to provide much needed mental health services, provide technical assistance and training to schools in this vein and develop collaborative ways in which school and

communities jointly address the mental health and psychosocial needs of students.   Both the *Mental Health in Schools Program* and its Centers were renewed in 2000 and in 2005 (CMHC 2006b; Anglin, 2003).

The development of these centers marked clear and concerted efforts toward school mental health integration and the offering of supports to schools in the tasks of mental health services delivery. Models for how services should be delivered emerged, with the following approaches generally seen as encompassing the bulk of school mental health: 1) Services are school-based with schools financing support services and employing professional staff to delivery services; 2) Formal agreements are made with community-based agencies to provide services and enhance service coordination; services are offered through referral of students to the outside agencies, or by having the community-based provider co-locate services on the school campus; 3) Services are provide through mental health units or clinics that serve a school district and provide a range of health services including mental health interventions; 4) Classroom-based curricula actively integrated into the learning activities are provided by teachers and support staff. (These tend to be prevention oriented.); and 5) an integrated approach in which school divisions or districts build a network of multiple providers to offer services addressing a spectrum of health and mental health needs (Brener, et al., 2001; CMHC, 2006b; Foster, et al., 2005). Whereas the models and approaches for delivery of interventions are varied, indicators of effective programming are generally agreed upon and include: consistency of implementation, programs that address multiple components (i.e. components for children, parents, teachers), multiple approaches (i.e. skills training along with educational or information sessions), programs that target specific behaviors

and skills, strategies that are developmentally appropriate, and approaches that are integrated into classroom curricula (Kutash, et al., 2006).

From a mental health perspective, these types of factors signaling integration that is organized toward effective programming and that follows well considered collaborations among both school-based and community providers are crucial. Trends in assessing and diagnosing children suggest some with problems stemming from routine emotional upsets, acting out behavior or learning problems are being assigned diagnostic labels that signify much more serious conditions. This trend is contrary to the reality that for most children with emotional and behavioral problems, the root cause is not internal psychopathology, but rather a response to environmental cues, circumstances and ongoing stressors (CMHC, 2006a). Misdiagnoses lead to expensive or inappropriate treatments (CMHC, 2006a), confound problems of stigma, access and outreach, and can undermine research and training efforts (Watson, Miller, & Lyons, 2005).

So while schools may be increasingly called upon to provide interventions and resources to large numbers of students with a veritable cornucopia of mental health problems and service needs, the integration of service delivery must necessarily be guided in large part by the professional mental health sector. Schools and mental health providers will be called upon to reorganize and reprioritize strategies, approaches, roles and responsibilities associated with school mental health services delivery. These efforts are imperative to a seamless integration of effective interventions that promote health and mental health while simultaneously enhances learning in the naturalistic ecology of the school setting.

Theoretical Framework

As with most behavioral health services research, the investigation of the processes by which model mental health and drug abuse programs and evidence-based practices have been installed in community-based settings is not guided by a single theoretical model or framework. There is greater emphasis on the use of theory to develop programs than to guide their implementation. Moreover, the available literature reveals the use of theory to guide implementation has more support and perhaps more utility in clinical practice settings than in non-traditional delivery systems such as schools. Discussion of three primary theoretical frameworks follows; these have been found congruent with the implementation of EBPs, and used to varying degrees to guide integration of mental health services in schools.

Diffusion of Innovations Theory. Roger's *Diffusion of Innovations Theory* (DOI) was developed as a means of describing and identifying individuals, organizations, and communities that do and do not successfully implement new practices. It is a staged-based theory and thus, change is presumed to occur in stages through predictable processes in the face of new innovations (Rogers, 2003). In schools, DOI has been used to study a number of specific areas, including health promotion programs, (Osganian, Parcel, & Stone, 2003), abstinence-only curricula, (Wilson, Pruitt & Goodson, 2008), implementation of mental health programs,(Atkins, Graczyk, Frazier & Abdul-Adil, 2003; Langley, et al., 2010), and drug abuse prevention programs, (Dusenbury, Brannigan, Falco & Hansen, 2003; Pankratz & Hallfors, 2004).

DOI describes attributes of interventions that are predictive of their rate of adoption. Programs that demonstrate *relative advantage* (over other programs or because of incentives), *compatibility* (with existing values, experience, needs), low *complexity, trialability* (ease of incorporation into existing structure), and *observability* (visible to others), are more readily adopted (Hallfors & Godette, 2002; Rohrbach, Gunning, Sun & Sussman, 2009; Wilson, et al., 2008). The first two attributes are utilized most often, even for programs that do not espouse a DOI orientation to implementation. Adopters in school settings look at whether or not interventions have some advantage over existing services, not the least of which is economic advantage, and they also weigh heavily the compatibility with current organizational structure and climate. (Hallfors & Godette, 2002; Rohrbach, et al., 2009; Wilson, et al., 2008).

Organizational change theories. Organizational change theories have also been found to be useful in the investigation of change related to adoption of EBPs. Organizational change theories represent conceptualizations of how EBPs and new innovations are translated in practice settings and the general preparedness of organizations to adopt them. These may be stage-based and delineate specific processes (Bartholomew, Parcel, Kok, & Gottlieb, 2001) or they may suggest strategies for cultivating a vision of change among members of an organization, planning for change and evaluating change and providing feedback (Senge, 1990). Organizational theories have been used in health and behavioral health settings alone, and often in concert with DOI to evaluate characteristics of readiness, adoption outcomes, and to compare organizations by type with regard to readiness for change (Aarons, Somerfield, & Walgrath-Greene, 2009; Donaldson, Rutledge, & Ashley, 2004; Gale, & Schaffer, 2009).

One commonality among organizational change theories is they acknowledge that organizations are complex and that change occurs at different levels within the organizational structure (i.e. practitioners, managers, administrators) (Aarons, Wells, Zagursky, Fettes, & Palinkas, 2009; Proctor, et al., 2007).

Studies of school-based prevention programs have relied on organizational change theories to confirm the notion that change does occur in stages and that it is reasonable to utilize varying strategies for change, depending on the stage of change (Wilson, et al., 2008; Osganian, et al., 2003).

An illustration of DOI through the lens of organizational change as an implementation model for schools was found in a study of implementation experiences of program administrators and mental health clinicians, concerning a specific EBP, the Cognitive Behavioral Intervention for Trauma in Schools (CBITS).   Roger's DOI theory was utilized to identify factors associated with implementation of mental health services, and related to characteristics across several domains: interventions; practitioners; clients; services delivery; and the organization itself (Langely, et al., 2010). A chief aim of the study was the identification of barriers and facilitators in these domains and to investigate difference between successful and unsuccessful implementation of the EBP. By seeking to understand the implementation climate for adoption of an EBP, the study incorporated measurements of leadership and organizational support rather than investigating only aggregate perceptions of groups of personnel. In doing so, the designers of this study acknowledge the role and importance of organizational factors that are specific to school settings in the investigation of barriers and facilitators to EBP adoption (Langely, et al., 2010).

41

This is important research for a number of reasons. First, schools are now clearly recognized as the de facto providers of the majority of mental health services accessed by children in the U.S. Understanding the barriers and facilitators to implementation of mental health services in schools has potential for more wholesale and effective integration of services. Further, by investigating organizational factors that are specific to school settings, researchers are more prepared to develop EBPs that are conceived of early in their development as school-based, as opposed to trying to find good-fit from among community-based interventions that can be adapted to schools.

The Langely, et al. study (2010) also provides a good theoretical model for this dissertation research. The authors of the *School Mental Health Services Integration Survey* sought to develop a survey in which barriers and facilitators in the target area were investigated and also to query multiple levels of school staff simultaneously on individual, school, organizational, and systems level factors. The research by Langely et al. (2010) gathered responses from administrators and school mental health services delivery personnel. The SMHSIS goes further in that several levels of school staff, from school administrators to school-based mental health practitioners, to guidance counselors and teachers, as well as school resource officers were asked to participate in the survey. The Langley study on the other hand, queried the EBP program administrators (not school administrators) and clinicians.

The Ecological Model. Beginning with Lewin and Cartwright's (1951) "ecological psychology", health behavior researchers and theorists have compiled an array of theoretical models rooted in the investigation of the interrelatedness of individuals and their environments. Ecological models are derived from the notion that

42

environmental factors associated with behavior, along with multiple and varied social and psychological influences, provide the platform and context for all purposeful behavior. Moreover, ecological models explicitly consider multiple levels of environmental influence simultaneously, distinguishing them from other health behavior and health promotion models that give priority to individual characteristics and proximal social factors (Sallis, Owen, & Fisher, 2008).

From the ecological perspective, these levels include intra-and interpersonal influences, as well as organizational, community, and public policy factors. Additionally, the contemporary notion of an ecological framework holds that it is the confluence of *individual-* and *environmental-* or *policy*-level variables that promote behavioral change. Recent acceptance of and reliance on ecological models of health behavior is evident in their use in nationally-guided public health programs and publications, including: *Healthy People 2020* (USDHHS, 2010); approaches of the World Health Organization (WHO) to tobacco control (World Health Organization, 2003); diet and physical activity (WHO, 2004); and the Institute of Medicine's (IOM) reports on health behavior and promotion (Institute of Medicine, 2001).

Ecological models, though multilevel in approach, are rooted in the investigation of health behaviors of individuals, including those models designed to guide behavioral interventions. These look at people at the individual level within the context of social and environmental influence on program adoption. Ecological models in this traditional sense have been used to investigate school mental health services by looking at changes in behavior of individuals, (i.e. teachers, students, parents) and the context of environment, in the face of adoption of new services (Astor, Pitner, & Duncan, 1996; Haynes, Comer,

43

& Hamilton-Lee, 1989; Mayer, Butterworth, Nafpaktitis, & Sulzer-Azaroff, 1983).

Arguably among the most noted of these studies was the work of Henggeler, Pickrel, &

Brondino, (1999) in the development of Multisystemic Therapy (MST) as an approach to

coordinating multiple levels of services delivery for children with serious conduct

problems. The development of MST was guided by the ecological framework. It is an

approach that recognizes that intervening at multiple levels of environmental and social

influence is optimal for engaging children within the varied settings in which they are

naturally and simultaneously embedded (Atkins, et al., 1998).

Over time, an interest in understanding group–level dynamics from the ecological

perspective emerged. Schools and other children's mental health services agencies were

in need of approaches that differed from interventions like MST in their ability to manage

larger numbers of youth with behavioral problems. One model program, Parents and

Peers as Leaders in School (PALS) was developed in an effort to reach a broader number

of perhaps less seriously troubled youth while still providing for coordinated services that

were individualized, effective and flexible (Atkins, et al., 1998). The PALS intervention

was an ecological model applied specifically to schools, taking into account the school

environment; this offered an innovation over MST which was concerned with affecting

the individual through coordination of care at multiple levels and settings, with school

being one of them (Atkins, et al. 1998). This noted difference was a demonstration of the

early recognition of schools as an ideal setting for provision of mental health services

when things such as resources (a more proportionate allocation of resources),

environmental advantage (multiple influences on child behavior) and convenience

(access to services) were considered (Atkins, et al., 1998). It was also, however, an

acknowledgement that the interaction of an entity with the environment could be applied to groups or settings as well as individuals. Through this and similar service model developments, the foray into the melding of organizational change and systems theory with the ecological perspective was broached.

These recent efforts toward the application of the ecological perspective in support of program implementation investigate the intent and behavior of groups and organizations from an ecological perspective. For school mental health services, this includes the observation of a transition from traditional consultation- and clinic-based models for school mental health services to the alternative, innovative models of the early '90s, meant to expand the capacity of schools to address social and emotional needs of children.

Cappella and colleagues (2008) proposed development of school-based mental health using the ecological model as a framework, informed by public health and organizational theories, and centered on the core function of schools: the promotion of learning. The model focuses on how groups – school leaders, teachers, parents, parent advocates, and mental health providers - collaborate to reduce barriers to mental health services delivery. The complex nature of collaboration across groups is acknowledged and described as being related to the differences between groups, the varying degrees of preparedness (training and experience) within groups, and the structure of the organization as a whole (Cappella, Frazier, Atkins, Schoenwald, & Glisson, 2008).

The key to effective collaboration among these groups within the school environment, as noted by Cappella and colleagues, is linked to the notion that mental

health providers should prioritize relationships with school staff, and improve their knowledge of school structure and activities. The authors suggest that an ecological model used within the school setting encourages communication in the language of educators, thereby supporting the core function of the school, while also reducing barriers to collaboration on mental health services integration (Capella, et al, 2008).

The model is a good match for understanding the dissertation research in that this study is also focused on differences between groups and understanding barriers to mental health services integration at varying levels of the school organizational structure. Moreover, an ecological model informed by elements of DOI (a capacity for describing and identifying individuals, organizations and communities that do and do not successfully implement new practices), and organizational change theories (the general preparedness of organizations to adopt new practices), provides a good framework for the study. (Table 1. provides a summary of research questions and their link to the theoretical framework.)

Table 1. Research questions and links to the theoretical framework

Research Questions	Link to Theoretical Framework
Role Adoption, Willingness, Implementation Facilitators • Which professional groups adopt which roles (e.g. facilitator, provider) in the delivery of mental health services to students? Are there significant differences in role adoption by professional group? • What is the level of willingness to engage in tasks associated with services delivery by professional group, and are there significant differences in willingness by professional group? • How does the perception of facilitators to	• Organizational change theories look at strategies for cultivating a vision of change among members of an organization, planning for change and evaluating change. *(OC)* • Groups can collaborate to reduce barriers to mental health services delivery. *(EM, OC)* • The complex nature of collaboration across groups is related to the differences between groups, the varying degrees of preparedness (training and experience) within groups, and the structure of the

Table 1. (continued)

mental health services integration vary by professional group?

- Are there significant differences in the perception of facilitators to mental health services integration by professional group?

organization as a whole. *(EM)*

- It is the confluence of *individual-* and *environmental-* or *policy*-level variables that promote behavioral change. *(EM)*
- Barriers and facilitators are identified in the investigation of differences between successful and unsuccessful implementation innovations. *(DOI)*

Utility of a modified version of the Evidence-Based Practice Attitudes Scale (EBPAS)

- Are there significant differences in outcomes on the EBPAS for this group of respondents, by professional group?

- The EBPAS was developed to some extent with DOI as a guiding framework.
- "Attitudes toward innovation can be a precursor to the decision of whether or not to try a new practice…" (Aarons, 2004, p. 62) *(DOI)*
- The adoption of innovation must account for the complexity of real-world settings, including aspects of organizational context, and the attitudes of personnel who are embedded with this context. *(DOI, OC)*

Associations between Role Adoption, Willingness, and Implementation Facilitators to EBPAS Outcomes

- Do attitudes toward adoption of EBPs differ by professional group?
- Which variables from the SMHSIS are associated with higher outcomes on the EBPAS?

- Attributes of innovations are predictive of their rate of adoption. *(DOI)*
- The intent and behavior of groups and organizations can be investigated from an ecological perspective. *(EM)*
- Organizations are complex and change occurs at different levels within the organizational structure (i.e. practitioners, managers, administrators) *(OC)*

Key: Diffusion of Innovations (DOI); Organizational Change Theories (OC); Ecological Models (EM)

CHAPTER 3. METHODS

To address the aims of the study, secondary data analysis of outcomes from the *School Mental Health Services Integration Survey* was conducted.

Preliminary Research

Setting and Background. The dissertation study was part of a larger evaluation project conducted on behalf of Hillsborough County Public Schools, as part of a research and policy development effort to integrate mental health services within the school district. In August of 2007, Hillsborough County Public Schools received a grant through the U.S. Department of Education for enhancement of mental health services in schools. The primary goal of the grant project, *"Integrating Schools and Mental Health Systems"* was to establish a planning and communications network among local schools and community mental health systems, juvenile justice, family organizations and the Florida Mental Health Institute at the University of South Florida (HCPS, 2010). Hillsborough County re-applied under the same grant mechanism and received a second award in July of 2010 with the primary objective of this second mental health services integration project to increase student access to quality mental health services. The School Board of Hillsborough County is especially interested in linkages for educators, students, families and community provider organizations that identify resources for academic achievement (HCPS, 2010).

48

Population. The survey was uniquely designed to query multiple types and

levels of professional staff simultaneously. This was done in order to address limitations

of historical school mental health services delivery research in which the focus was on a

profession (e.g. school social workers, psychologists, or teachers) (Atkins, Frazier,

Leathers, Graczyk, & Talbott, et al., 2008; Kratochwill, 2007; Kratochwill & Shernoff,

2004; Suldo, Friedrich, & Michalowski, 2010), or a specific type of respondent (e.g.

administrators) (Langely, et al., 2010). Survey respondents were employees of

Hillsborough County Public Schools representing seven professional group categories:

principals and assistant principals, teachers, guidance counselors, social workers, school

psychologists, school resource officers, and school health staff.

Instrumentation. The first task of the evaluation project was the development of

the *School Mental Health Services Integration Survey*. The survey was modeled after

similar research efforts and the investigation of and planning for implementation of

mental health services (Aarons, 2004; Armstrong, Massey, & Boroughs, 2003; Langley,

et al., 2010).

The survey was designed to gather information from academic, student services,

and administrative staff members including guidance counselors, school social workers,

school psychologists, health educators, school resource officers, teachers, principals and

assistant principals. The survey assessed their understanding of roles and responsibilities,

willingness to engage in implementation activities, and perspective on facilitators

regarding implementing, mental health services within the schools. The final survey was

the result of multiple iterations. The survey developers, Dr. O. Tom Massey, and Donna

L. Burton finalized items based on their experience with school mental health services

integration, knowledge of implementation science, a review of the literature associated

with similar research studies, an understanding of the theoretical models utilized in

school services research, and consultation with personnel of the School Board of

Hillsborough County. Selected school board personnel read the survey and provided

recommendations. The SMHSIS was then created using Qualtrics® software.

The SMHSIS was conducted by email, and included all professional service staff

and a random stratified sample of teachers. A total of 2,044 school staff received the

email invitation with the link to the Qualtrics® survey. The survey was voluntary and no

inducements were offered for participation. Ken Gaughn, the Supervisor of School Social

Work Services for Hillsborough County Public Schools served as the primary contact

representing school professional staff and disseminated the email through appropriate

email lists, according to a single-level, multi-stage emailing process. Reminder emails

were written during the time frame allotted for completing the survey, during April and

May of 2011, to encourage participation from the targeted groups.

Chief objectives of the survey were to:

- ask for opinions from school services staff as to organization and delivery of
  mental health and drug abuse services for students;
- elicit information as to role identification for various groups of school services
  staff as regards mental health and drug abuse services integration;
- determine to what extent school services staff are willing to adopt other
  responsibilities, roles and tasks associated with mental health and drug abuse
  services integration;

50

- elicit perceptions of school services staff on the barriers and facilitators of mental health and drug abuse services integration

- provide information to SBHC mental health services administrators as to the outcomes of the first evaluation project ("*Integrating Schools and Mental Health Systems*"); and

- gather information from multiple levels of school services staff about attitudes related to the adoption of evidence-based practices.

Each bullet above describes a distinct segment of the survey and these are described in greater detail here.

1. Vision for mental health and drug abuse services provision. The survey developers determined "vision" for provision of services to be the respondents' description of the ideal locations for services delivery, manner for organization and delivery of services, and the persons responsible for providing them. There were 6 items in this domain. This domain first asked respondents to consider three combinations of service locations: a.) referral to outside agencies with agency staff providing services; b.) provision of services in the school setting by community service provider with expertise in these areas; and c.) provision of services in the school setting by school-based professional staff. Respondents selected one of these three categories for each of the first two items in this domain, representing vision for *mental health assessment and counseling services*, and *mental health prevention and early intervention* services, respectively. These categories were selected based on literature associated research on typical services provision (Langley, et al., 2010). Items were also written to gather information about delivery of services in the classroom setting, integration of services

into an overall health plan for students, parents' role in deciding on services delivery and the role of juvenile justice in services delivery. The responses to these remaining four items were on a 5-point Likert Scale from strongly disagree (1) to strongly agree (5). Outcomes related to this segment of the survey have been evaluated with results disseminated to Hillsborough County Public Schools; these outcomes are not related to the dissertation research.

2. Role identification among school personnel. This section of the survey asks respondents to speak to the degree to which survey statements match their current roles and responsibilities. Survey items were designed to address roles and responsibilities among school staff that promote the seamless delivery of behavioral health services delivery in the school setting. These include items that address: searching for, developing, and delivering interventions that are effective and appropriate to meet student needs, working toward the development of a system for referral to or provision of services, being one who refers students to services or provides services directly to students, being one who provides prevention services, ensuring that the mental health needs of students are met, facilitating student access (i.e. adjusting student schedules) to services and linkage of services to an overall health plan, serving as a member of a team that works to solve service needs, and using data to drive mental health needs. There were 12 survey questions in this domain, with responses on a 5-point Likert Scale from strongly disagree (1) to strongly agree (5).

3. Willingness to engage in tasks associated with services delivery. In this section of the survey, respondents were asked to indicate their level of agreement with statements about their willingness to be involved in activities associated with

services delivery. Items included questions about willingness to search for effective interventions, acting as a member of a problem solving team, supporting school staff who provide mental health services, referring students to outside providers, being involved in the direct provision or integration of services in the school setting, being involved in the integration into the school setting of services offered by outside providers, and meeting with parents to assist in referral and service delivery protocols. There were 9 survey items in this domain, with responses on a 5-point Likert Scale from strongly disagree (1) to strongly agree (5).

     4. Facilitators to services delivery. Items in this section of the survey asked respondents to indicate their level of agreement with statements that describe various facilitators of school mental health integration. Again, review of the literature has resulted in identification of barriers and facilitators to school mental health integration (Langley, et al., 2010; Powers, et al., 2010) and this review along with knowledge of the dynamics and structure of mental health services for Hillsborough County Public Schools informed the writing of survey questions. Items included opinions from respondents in areas such as encouragement and support from administrators and the school district, teamwork among professionals, the importance of mental health services to academic success, working within teams and networks of professionals, clear and designated referral protocols for mental health and drug abuse protocols, shared responsibilities in addressing student needs, communication with community agencies, structural supports, scheduling flexibility, and training. There were 23 survey questions in this domain, with responses on a 5-point Likert Scale from strongly disagree (1) to strongly agree (5).

5. Outcomes of the "Integrating Schools and Mental Health Systems"
project. During development of the SMHSIS items were reviewed with school personnel who were working closely with USF on the project. They requested that items be added to assess outcomes from the first School Mental Health Services Integration study. Responses to the five items in this domain of the survey were on a 5-point Likert Scale from strongly disagree (1) to strongly agree (5). Outcomes related to this segment of the survey have been evaluated with results disseminated to Hillsborough County Public Schools; these outcomes are not related to the dissertation research.

6. Evidence-based Practices Attitudes Scale. In 2004, Greg Aarons, Departments of Psychiatry and Psychology, University of California, San Diego, first reported on the Evidence-based Practice Attitude Scale, (EBPAS) a measure that he developed to assess mental health provider attitudes toward adoption of new treatments and interventions that are evidence-based (Aarons, 2004). Studies utilizing the EBPAS (Aarons, 2004; Aarons, et al, 2007) have shown good internal consistency reliability for the total score (Cronbach's α = .77 and .79, respectively). Subscale scores have shown good internal consistency reliability (α range of = .78 –.93 on scales measuring appeal, requirements and openness), with somewhat lower reliability for the divergence scale (α = .59 and .66, respectively).

This EBPAS was appended onto the *School Mental Health Services Integration Survey* with the intent that outcomes of this instrument would be used to assess attitudes of Hillsborough County School's professional staff toward the use of evidence-based practices, and to look at associations between EBPAS scores and scales on the SMHSIS. The EBPAS was developed for use with mental health providers and therefore, had to be

54

adapted for use with school professional staff. The changes were minor and consisted of the following: the term "clients" which appeared in two questions was changed to "students"; the terms "therapy" and "treatment", which appeared in eight questions and in a portion of the instructions, were changed to the term "services"; and the term "agency", which appeared in one question, was changed to "school". These changes were made following a discussion of them with the instrument's author, Dr. Greg Aarons. Additionally, there are two items on the EBPAS that can produce a double negative, depending on the response, and challenge readability regardless of the response.

The SMHSIS and the EBPAS (original and modified versions can be found in Appendices A, B, and C respectively.

Data Management and Cleaning

Data were received from the PI of the evaluation project, Dr. O. Tom Massey, as an IBM SPSS Statistic 21.0 dataset.

In April of 2011, The SMHSIS was sent to 2,044 school staff by email and the dataset received contained 1,040 responses.   Of these, 260 respondents did not complete any survey items beyond the preliminary demographics; specifically, these respondents did not complete items on survey domains that were to be used in data analyses and they were removed from the data set, leaving 780 cases. An additional 45 respondents began completion of survey items, but completed less than 20% of the survey, and did not complete items pertinent to survey domains that were to be used in data analyses; and these cases were also removed, leaving 735 survey responses. Finally, 25 respondents self-selected the "other" category for professional group. These cases were re-classified

into groups that most closely matched their professional group according to the write-in description provided by the respondents, as described below in the section on descriptive statistics. Five of the cases could not be re-classified due to lack of consensus, and they were removed from the sample. The final sample size of 730 cases represents a survey response rate of 35.7%. Figure 1. is a representation of the data cleaning process.

The SMHSIS was sent to 2,044 school staff by email; the dataset received contained 1,040 responses.

2,044

Of these, 260 respondents did not complete items beyond preliminary demographics; they were removed leaving 780 cases.

1,040

An additional 45 respondents began the survey but completed less than 20% and these cases were also removed, leaving 735 survey responses.

780

Finally, 25 respondents self-selected the "other" category for professional group; 20 were reclassified and the 5 that could not be reclassified were removed.

735

The final sample size of 730 cases represents a survey response rate of 35.7%.

730

Figure 1. Data cleaning process

Data Analysis

   Descriptive statistics. Descriptive statistics include only the respondent's identification of their current job title. A preliminary step to analyzing professional group belongingness was the reclassification of respondents who self-selected the "other"

56

professional group category into the groups that most closely match their professional

group belongingness. A preliminary step to analyzing professional group belongingness

was the reclassification of respondents who self-selected the "other" professional group

category into the groups that most closely match their professional group belongingness.

This was done by distributing the list of 25 cases with respondent's write-in descriptions

to the study PI, and two administrative personnel from Hillsborough County Public

Schools who participated in the survey development. These three individuals were

provided with the list of professional group categories from the survey and asked to

reclassify these cases, based on the written description provided by respondents. Twenty

of the cases were re-classified. In 5 cases, there was no consensus as to reclassification

and the cases were therefore removed from the dataset.   The rational here was to

improve, if even slightly, the power for analyzing between group variance. Moreover,

the "other" category was thought to be likely to have greater within-group variance;

because this set of respondents did not see themselves as fitting neatly into one of the

identified professional groups, they are less likely to be similar to one another. By

eliminating the "other" category and re-classifying these respondents, a portion of the

error associated with between group variance can be eliminated. The re-assignment of

respondents from this category can also improve power for any professional group

represented by a low or marginal *n.*

Distribution of scores. Because data were to be used in parametric

statistical techniques, they were assessed for normality of distribution of scores.

Skewness, which indicates the symmetry of the sample respective to a normal

distribution bell curve, was negative for this data set (-.324, SE=.097), suggesting a

57

sample distribution with on the right side of the graph, (i.e. some clustering of scores high end). The 'peakedness' of the distribution, or kurtosis, was positive (.715, SE=.193), indicating scores clustering in the center with short tails, suggesting few cases in the extremes (Pallant, 2010). Kolmogorov-Smirnov and Shapiro-Wilk tests of normality were both significant for violation of assumption of normality (K-S test = .04, p<.05; W=.99, p,.05, respectively). However, by inspecting the frequency histogram for the dataset, and taking into account the large sample size of 200 or more cases (Tabachnick & Fidell, 2007), it was determined that the deviations from normality were modest and would not have a substantive effect on analyses.

Factor Analysis. Exploratory Factor Analysis (EFA) is a data reduction technique used to reduce large numbers of variables into smaller components or sets of factors based on their intercorrelations (Pallant, 2010). EFA was conducted for three sections of the survey per Aim 1. of the study, which was to describe indicators of mental health integration preparedness. Survey items addressed school staff beliefs about mental health services integration formed around constructs including the *roles* taken by school personnel in the implementation in mental health services, the *willingness* of school personnel to become engaged in mental health integration activities, and *facilitators* to services integration. EFA was utilized to answer the first question related to Aim 1: What factors are produced on each of three scales measuring Role Identification, Willingness, and Implementation Facilitators?

Assumptions.

Sample size.   Tabachnick and Fidell (2007) suggest at least 300 cases for factor analysis. EFA is feasible for overall sample sizes of 150 or more, with a ratio of 5 cases for each variable (Pallant, 2010). For all three scales, cases with missing variables were deleted listwise. Given that the sample sizes were more than adequate for EFA, (Role Identification, n=656; Willingness, n=653; and Implementation Facilitators, n=538), listwise deletion as a conservative approach to missing data was selected. Exploratory Factor Analysis is meant to evaluate the underlying structure of survey domains and theoretically, imputation of missing data may force a false factor solution. Further, the ratio of cases for each variable was also examined. The number of variables for Role Identification, Willingness, and Implementation Facilitators were 12, 18, and 23, respectively and even with a conservative ratio of 10 cases per variable (Nunnally, 1978) the dataset was determined suitable for EFA.

Correlation matrix factorability. The correlation matrices for all three sets of variables were examined for factorability. For all scales, sufficient numbers of adequate correlations (r = .3 or greater) among variables were noted (Pallant, 2010). Further, Bartlett's Test of Sphericity was statistically significant at $p < .05$ for all scales; this is to be expected with the large sample sizes, given that this test of factorability of variables is notably sensitive to the null hypothesis that variables in the matrix are uncorrelated (Tabachnick & Fidell, 2007). The Kaiser-Meyer-Olin Measure of Sampling Adequacy (KMO) value was also examined as a determinant of factorability. The KMO statistic is a means of comparing the magnitudes of observed and partial correlation coefficients; large values indicate that factor analysis is appropriate. In this case, the

KMO statistic was greater than .6 for all scales (Role Identification, KMO = .911, Willingness, KMO = .913and Implementation Facilitators, KMO = .902) (Pallant, 2010; Tabachnick & Fidell, 2007). Taken together, these tests of factorability meet the minimum recommendations to indicate that these matrices are factorable.

Factor extraction methods. Given that the aim of the EFA was not only data reduction, but the detection of underlying structure and factor intercorrelations, Principal Axis Factoring (PAF) was selected as the extraction method (O'Rourke, Hatcher, & Stepanski, 2005). Because factors were expected to correlate, oblique (Promax) rotation was applied (Tabachnick & Fidell, 2007). Factor solutions were determined by examination of eigenvalues, and inspection of the screeplot initially. A parallel analysis was then run for all three EFAs, using Monte Carlo PCA for Parallel Analysis (Watkins, 2000).   For all factors, items that loaded at least .32 on a primary factor were retained (Tabachnick & Fidell, 2007).

One-way analysis of variance. The remaining research questions associated with Aim 1 of the study, as well as Aim 2 were addressed through tests of one-way analysis of variance. One-way analysis of variance is used to uncover significant differences in mean scores on a dependent variable across a categorical independent variable with two or more groups or levels (Pallant, 2010). The objective of this set of questions was to examine significant differences by professional group for survey constructs uncovered in EFA and for attitudes toward evidence-based practice. One-way ANOVA was used to investigate questions of significant differences by professional group in:

- role identification,

- willingness to engage in tasks of mental health services implementation,

- perceptions of facilitators to implementation of mental health services, and

- attitudes toward evidence-based practice.

In each set of ANOVAs, the independent (grouping) variable represented the 7 respondent groups by profession (principal or assistant principal, teacher, guidance counselor, social worker, school psychologist, school resource officer, and school health staff).

Prior to conducting ANOVAs by professional group mean scores were computed for the factors associated with each EFA. Mean substitution was used for missing variables prior to conducting one-way ANOVAs by professional group. Mean substitution as a method for managing missing data is a conservative approach; this method does not alter the mean for the distribution as a whole. Variance of the variable is reduced, and consequently correlation between variables is also theoretically reduced (Tabachnick & Fidell, 2007). In this analyses, however, mean substitution was used in computing the mean scores for each case, for each of the factors that resulted from the three EFAs. Mean scores were computed only for cases in which respondents had completed 80% of the variables associated with the factor. Consider the following example: The EFA for the survey domain addressing role identification produced a two-factor solution with 5 and 7 items for factors 1 and 2 respectively. The first factor was comprised of survey items 15, 16, 17, 18 and 19. Syntax in SPSS written as MEAN.4(15, 16, 17, 18, 19) calculated the mean of items for each case in which 4 of the 5 items were completed. In this way, a mean score for the factor was calculated based on how that

respondent answered other variables related to that factor. And, cases for which

respondents answered fewer than 4 items were deleted. By using a criteria of 80% of

completed items for each factor, the approach ensures that large amounts of data are not

substituted, but that cases with only a few missing items were included, improving

overall power for conducting the ANOVAs. This approach to managing missing values

remains conservative (over inserting a group mean or grand mean), (Tabachnick & Fidell,

2007). Further, the amount of missing data for variables related to these 6 factors was

small, with no more than 9% missing values for any one variable. The same method was

used for computing the mean scores for the EBPAS which represents the dependent

continuous variable in the ANOVAs.

Finally, analyses were repeated with and without missing data to ensure

confidence in the results as reported in Chapter 4.

Assumptions. The SMHSIS was completed individually by respondents,

in an online format, with assurances provided as to the voluntary and confidential nature

of responses and the aggregation of data. The assumption of independence of

observations is therefore presumed to have not been violated. As mentioned earlier, the

assumption of normal distribution is violated with this dataset. However, sufficient

sample sizes ($n \geq 541$) for all ANOVAs, mitigate the effects of a non-normal distribution.

Levene's test for homogeneity of variance was used to determine violations of the

assumption of homogeneity of variance in total scores across groups.

Output was examined to determine if there were significant differences on mean

scores ($p < .05$) for dependent variables for each analysis. Statistically significant

differences were found in each ANOVA and results of post hoc tests (multiple

comparisons using Tukey HSD tests, means plots) were therefore examined. Finally, eta

squared was calculated for each ANOVA (sum of squares between groups / total sum of

squares) to determine effect size.

Multiple linear regression. To address Aim 2. of the study a regression model

was used to determine which variables developed from the SMHSIS were associated with

outcomes on the EBPAS. Multiple regression can be used to investigate the relationship

between a continuous dependent variable, (in this case the sum scores on the EBPAS)

and multiple independent predictor variables (Pallant, 2010). The independent variables

used in the regression model included the sum scores for the variables obtained from

EFA of three survey scales, namely: Role Identification (2 factors), Willingness (1

factor), and Implementation Facilitators (3 factors), for a total of 6 predictor variables.

Standard multiple regression was used initially, followed by a hierarchical multiple

regression model, following examination of the results of the standard regression.

Assumptions.

Sample size. In regression models, sample size is important to

generalizability of results and recommendations concerning sample size vary (Pallant,

2010). Stevens (1996) recommends 15 cases per predictor variable. The formula for

sample size given by Tabahnick and Fidell (2007) is $N \geq 50 + 8m$, where m = the number

of independent variables. When the number of independent variables (6) is taken into

account, the minimum sample size needed would be 98 for this regression model. That is

N $\geq$ 50 + 8(6), or 98. In this analysis, cases with missing values were deleted listwise leaving a total N of 536 cases which is a more than adequate sample.

Multicollinearity and singularity. The relationship among independent variable was examined for violations of multicollinearity.   No two variables had a bivariate correlation greater than .7, and all variables were therefore retained (Pallant, 2010; Tabachnick & Fidell, 2007).   With regard to singularity, all variables in the regression model represent scales that are independent of all other scales. There are no variables that were produced from subscales where the total score of a scale is also used (Pallant, 2010).

Outliers, normality, linearity, and homoscedacticity. Tabachnick and Fidell (2007), identify outliers as those data points with standardized residual values of ±3.3. Only 1% of cases in a normally distributed sample are expected to fall outside of this range (Pallant, 2010). Standardized residual plots and casewise diagnostics (examination of standard residuals) produced in SPSS Statistics 21.0 for the regression model were examined for outliers, and three outliers were identified, representing less than 1% of all cases. Also, inspection of the residuals statistics, and specifically Cook's Distance (maximum=.036) indicate that this maximum is < 1, and is therefore not likely to be having an undue influence on the results of the regression model (Pallant, 2010). No action was taken therefore, with regard to these outliers.

Deviations from normality and linearity were evaluated by examination of the scatterplot and the Normal Probability Plot (P-P) of Standardized Residuals (Pallant, 2010). For this regression model, points on the probability plot are arranged in a

64

generally straight and diagonal line; scatterplot points are aggregated in the center and distributed in a generally rectangular shape, slightly to the left of center. As mentioned, only three cases fell outside of the range of ±3.3 for residual values and the scatterplot confirms that assumptions of linearity are met.

Multiple regression. Standard multiple regression was conducted first. The model was evaluated through examination of the R Square value to assess the variance in the dependent variable explained by the model. Based on the results which called into question hypotheses on which the survey was developed, a hierarchical multiple regression was conducted to control for certain variables and to determine if the remaining variables add to the explained variance based on their own point of entry into the regression model (Tabachnick & Fidell, 2001).

Table 2 summarizes the study aims, research questions and data analysis methods.

Table 2. Study aims, research questions and analyses

Research Aims Questions	Analysis
Describe indicators of SMH integration readiness • Role Identification • Willingness • Implementation Facilitators	• Exploratory Factor Analysis (EFA) • Tests of reliability of domains and factors produced
Assess between group differences	• One-way ANOVAs by professional group with post hoc Tukey tests • Paired sample t-tests*
Assess the utility of the EBPAS and outcomes	• One-way ANOVAs by professional group with a post hoc Tukey test
Evaluate association between indicators of integration readiness and the EBPAS	• Multiple regression

* paired sample t-tests were conducted with the Role Identification indicator only

Protection of Human Subjects

Based on the determination of the University of South Florida Division of Research Integrity and Compliance that the project did not meet the definition of human subjects research, the study was not within the purview of the USF IRB. A letter to this effect can be found in Appendix D. Nonetheless, steps were taken to ensure protection of survey respondents.   Instructions to the survey included a brief statement of background, followed by a statement of evaluation of the survey as low risk. Survey participants were informed of the voluntary nature of the survey and the option to stop the survey, or skip items, if any questions provoked unease. They were also informed of confidentiality of

survey data, the aggregate nature of data reporting, the de-identification of data, and the

restrictions of access to data limiting the viewing of data to the study's principal

investigator and assistant researchers. Respondents were also informed of protocols for

securing and storing data. Finally, survey participants were provided with contact

information for the principal investigator for use in the event of questions about the

survey and they were given contact information for the USF IRB in the event of

questions about their rights, or to file complaints about the research. Participants were

asked to indicate their understanding of these protocols prior to beginning the survey.

CHAPTER 4. RESULTS

Study population by professional group

Survey respondents were employees of Hillsborough County Public Schools representing 7 professional group categories: principals and assistant principals, teachers, guidance counselors, social workers, school psychologists, school resource officers, and school health staff. Principals and assistant principals represent the largest group of respondents (N=224), however, school resource officers had the highest response rate of 100%. School health staff represent the group with the lowest response rate (15.4%), and consequently also the smallest group size (N=43).

Table 3 summarizes the survey response rates by professional group.

Table 3. Survey response rates by professional group (N=2,044)

Professional group	N	Total surveyed	Response rate	% of total sample
Principal or assistant principal	224	630	35.5%	30.7
Teacher	61	300	20.3%	8.5
Guidance Counselor	103	375	27.5%	14.3
Social worker	95	175	54.3%	13.2
School psychologist	120	210	57.1%	16.7
School resource officer	74	74	100.0%	10.3
School health staff	43	280	15.4%	5.9
Missing	10	--	--	1.4
Total	730	2,044	35.7%	100

Exploratory Factor Analysis

EFAs were conducted on scales assessing Role Identification, Willingness, and Implementation Facilitators.

Role Identification. The EFA for the 12 items on the Role Identification Scale produced a two-factor solution; this was determined by examination of the eigenvalues, scree plot, and a parallel analysis using the Monte Carlo PCA for Parallel Analysis (Watkins, 2000). All 12 items were retained and the EFA accounted for 50.4% of the variance (44% contributed by factor 1 and an additional 6.5% by factor 2). Five items of the 12 items scale loaded on factor 1and 7 items on factor 2; these factors were then evaluated for their representation of role constructs. Recall that this section of the survey was designed to address roles and responsibilities among school staff that promote the seamless delivery of mental health services in the school setting. The first factor represents a *Provider* role and includes items that are related to the direct delivery of services to students in the school setting. The second factor, the *Facilitator* role is representative of functions that support, promote and facilitate services and that may also be related to overall administration of services. The factor solution was generally consistent with the dimensions that were hypothesized during development of the survey, with a couple of noted exceptions. First, it was anticipated that there may be a third role, that of mental health services administration. Three of the 4 items that were related to administration of services loaded on factor 2, the Facilitator role. Also, one item that would seem to be clearly within the dimension of Provider (providing prevention programs), loaded on the Facilitator factor and conversely, an item that was hypothesized

69

as a Facilitator function, (referring students to mental health services) loaded onto the Provider role. However, all variables loaded substantially on just one factor.

Willingness. The 9 items of the Willingness scale were also subjected to EFA. This scale was developed to assess the willingness of school professional staff to be involved in activities associated with mental health services delivery or integration. These items closely matched survey items on the Role Identification scale to understand the extent of willingness regardless of an individual's interpretation of their role.   Items on the *Willingness* scale loaded onto a single factor, also determined by examination of the eigenvalues, scree plot, and a parallel analysis, and the factor accounted for 55.1% of the variance.

Implementation Facilitators. An EFA of 23 items on the Implementation Facilitators scale produced five factors, accounting for 47.5% of the variance and explaining 31.6%, 6.1%, 5.0%, 2.8%, and 2.1% of the variance respectively. Two of the factors had only two variables, and three scale items did not load on any of the factors. Examination of the scree plot showed a clear break after the third factor. Consideration was given to retaining just these three factors and a parallel analysis was then conducted which supported this decision. In the parallel analysis, the first three factors had eigenvalues that exceeded the corresponding criterion values for a data matrix that was randomly generated for the same number of variables and sample size (23 variables x 538 cases).

A second EFA forcing a three-factor solution was then conducted on the Implementation Facilitators scale. The three-factor solution accounted for 41.5% of the

70

variance with the three factors contributing 31.3%, 5.7%, and 4.6% respectively. In this case, the three factors included 13, 4, and 5 of the 23 variables, respectively and only one variable did not load on any of the factors; it was therefore removed. Recall that this section of the survey was designed to elicit perspectives from respondents on things that facilitate school mental health services integration, such as encouragement and support, teamwork, working within networks, clear and designated protocols, shared responsibilities in addressing student needs, communication, structural supports, scheduling flexibility, and training. Individual items were reviewed carefully with respect underlying dimensions and the three factors labeled: *Overall Structure and Support, Individual Support, and Shared Professional Responsibility*. Given the exploratory nature of the study and the aim of investigating dimensions of mental health services in schools, the three-factor solution overall seemed a better representation of underlying constructs. Factor loadings for all domains can be found in Appendix D.

One-way analysis of variance (ANOVA)

Research questions pertaining to investigation of significant differences by professional group in perception of mental health integration preparedness were addressed through one-way analysis of variance on each of the six factors uncovered through EFA (Provider Role, Facilitator Role, Willingness, Overall Structure and Support, Individual Support, and Shared Professional Responsibility). All ANOVAs were significant for between group differences and these are detailed below. Table 4 summarizes the results of ANOVAs for these six factors, by professional group.

Table 4. Results of ANOVAs for role identification, willingness and implementation facilitators by professional group

Domain	Factor	df	F
Role Identification	*Provider Role*		40.89*
	Between Groups	6	
	Within Groups	705	
	Facilitator Role		17.37*
	Between Groups	6	
	Within Groups	705	
Willingness	Willingness		55.32*
	Between Groups	6	
	Within Groups	689	
Implementation Facilitators	*Overall Administrative Structure*		4.76*
	Between Groups	6	
	Within Groups	650	
	Individual Support		17.65*
	Between Groups	6	
	Within Groups	650	
	Shared Professional Responsibility		15.08*
	Between Groups	6	
	Within Groups	650	

Note: *p < .001

Role identification by professional group. One-way ANOVAs were conducted to explore differences in role identification by professional group. Significant differences at the p < .05 level were noted: $F(6, 705 = 40.89$ p = .000, for the *Provider* group; $F(6, 705) = 17.37$, p = .000, for the *Facilitator* group. Effect sizes, calculated using eta squared were considered large for the *Provider* role at .26, and medium to large for the *Facilitator* role, at .13 (Pallant, 2010). Several significantly different mean scores were indicated among the 7 professional groups in post-hoc comparisons using the Tukey HSD test, and paired sample t-tests were conducted to determine if

72

professional groups endorsed one role more strongly than the other. Guidance

counselors (M = 3.80, SD = .66), $t(101)$ = 5.02, p < .001, social workers (M = 4.16, SD =

.54), $t(93)$ = 6.35, p < .001), and psychologists (M = 4.17, SD = .52), $t(119)$ = 6.78, p <

.001) all endorsed the *Provider* role, and principals and assistant principals as a group

(M = 3.76, SD = .59), $t(220)$ = -8.58, p < .001) endorsed the *Facilitator* role. For

teachers, school resources officers and school health staff, there were no significant

differences in roles endorsed.

  Willingness by professional group. This section of the survey queried

respondents on their willingness to be involved in activities associated with mental

health services delivery. Items included questions about willingness to search for

effective interventions, acting as a member of a problem solving team, supporting school

staff who provide mental health services, referring students to outside providers, being

involved in the direct provision or integration of services in the school setting, being

involved in the integration into the school setting of services offered by outside

providers, and meeting with parents to assist in referral and service delivery protocols.

  A one-way ANOVA was conducted to explore differences in willingness by

professional group and significant differences at the p < .05 level were noted ($F(6, 689)$

= 55.32, p = .000). The effect size, calculated using eta squared was consider large at

.33. Several significantly different mean scores were indicated among the 7 professional

groups in post-hoc comparisons using the Tukey HSD test.

  Among the highest scoring groups on this scale were social workers and school

psychologists, with no significant differences between these two groups, but differences

between them and all other groups. Likewise, there were statistically significant

differences between the three lowest scoring groups (teachers, school resource officers and school health staff) and all other groups. Scores of guidance counselors fell in the mid-range of scores and this group was significantly different from all other groups. Principals and assistant principals as a group scored similarly to school health workers, but were significantly different from all other groups. Graph 2 summarizes the mean differences by professional group on the *Willingness* scale.
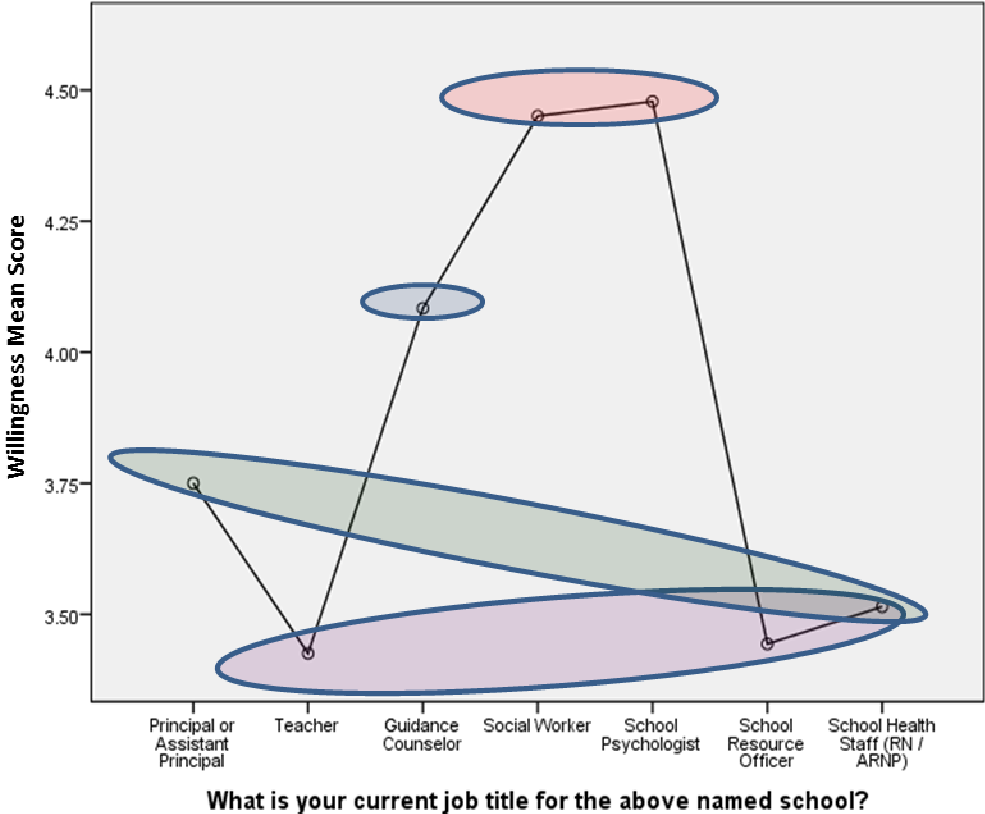
Figure 2. Results of ANOVA and post hoc Tukey test of mean score between group differences for the Willingness domain

In a follow-up one-sample t-test, the mean score of the lowest group, teachers (*M* = 3.43) was compared with a test value of 3.0, which represents a neutral response,

74

neither agree nor disagree. The one-sample t-test indicated that the mean score was significantly different from the neutral test value ($M = 3.43$, $SD = .81$, $t(57) = 4.00$, $p<.001$).

Implementation facilitators by professional group. Items in this section of the survey asked respondents to indicate their level of agreement with statements that describe various facilitators of school mental health integration. Items included opinions in areas such as encouragement and support from administrators and the school district, teamwork among professionals, the importance of mental health services to academic success, working within teams and networks of professionals, clear and designated referral protocols for mental health and drug abuse protocols, shared responsibilities in addressing student needs, communication with community agencies, structural supports, scheduling flexibility, and training. The EFA resulted in a three factor solution and after review of individual items with respect underlying dimensions the three factors labeled: *Overall Structure and Support, Individual Support,* and *Shared Professional Responsibility*.

One-way ANOVAs explored differences in these integration facilitators by professional group and statistically significant differences at the p < .05 level were noted: $F(6, 650) = 4.76$, p = .000; $F(6, 650) = 17.65$, p = .000; and $F(6, 650) = 15.08$, p = .000 for *Overall Structure and Support, Individual Support,* and *Shared Professional Responsibility,* respectively. The effect sizes, for *Overall Structure and Support* calculated using eta squared was considered small – medium at .04, large for *Individual Support* at .14, and medium for *Shared Professional Responsibility*, at .12.   Several significantly different mean scores were indicated among the 7 professional groups in

post-hoc comparisons using the Tukey HSD test. These differences are summarized in

Table 5.

Table 5. Results of ANOVA and post hoc Tukey test of mean score between group differences for the Implementation Facilitators domain

Professional Group	Implementation Facilitators		
	Overall Administrative Structure M(SD)	Individual Support M(SD)	Shared Professional Responsibility M(SD)
Principal and Assistant Principal	3.83(.48)***	3.30(.65)**	4.04(.48)**
Teacher	3.53(.72)*	2.93(.75)*	3.94(.58)**
Guidance Counselor	3.53(.61)*	3.47(.72)**	4.14(.46)***
Social Worker	3.56(.58)*	3.68(.57)***	4.28(.49)***
Psychologist	3.64(.63)**	3.83(.49)***	4.40(.43)***
School Resource Officer	3.68(.45)**	3.44(.66)**	3.84(.51)**
School Health Staff	3.65(.51)**	3.18(.72)**	3.95(.44)**

* Lower scorers ** Mid-range scorers   *** Higher scorers

With regard to *Overall Administrative Structure* as an implementation facilitator, principals and assistant principals were the highest scorers; mid-range scorers, that is, psychologists, school resource officers and school health staff were more similar to each other, but still not significantly different from principals and assistant principals. Mid-range scorers were significantly different from all lower scorers (i.e. teachers, guidance counselors and social workers).

For the *Individual Support* facilitator, social workers bridged the mid- and high-range scores; they scored similarly to the highest scoring group, psychologists, however, they were not significantly different from the mid-range scorers. Teachers on the other hand spanned the mid- to low-range scores, in that, as the lowest scorers for this implementation facilitator that were significantly different from all higher scorers with the exception of school health staff.

Finally, with regard to *Shared Professional Responsibility*, social workers and psychologists were the highest scoring groups, but with guidance counselors bridging the high- and mid-range score. That is, their scores were not significantly different from those of social workers, nor were they different from principals and assistant principals, teachers or school health staff. The lowest scoring group, school resource officers were similar to all of the mid-range scorers with the exception of guidance counselors.

EBPAS by professional group. An preliminary step to data analysis with this portion of the survey was to assess the reliability of the scale in light of the modifications. Strong internal consistency was noted for the scale ($\alpha = .90$) with this group of respondents, suggesting that changes to the language did not affect overall reliability of the scale. The final ANOVA was conducted to explore difference in EBPAS outcomes by professional group. Mean scores were highest for social workers and psychologists and lowest for school resource officers and school health staff. Mid-range scorers included principals and assistant principals, and guidance counselors, with social workers bridging the high- and mid-range scores. Teachers were also mid-range scorers, but their mean scores bridged both high- and low-range scores; they were significantly different from only school resource officers, the lowest scoring group.

Figure 3. Summarizes the results of the one-way ANOVA for EBPAS outcomes, by professional group.
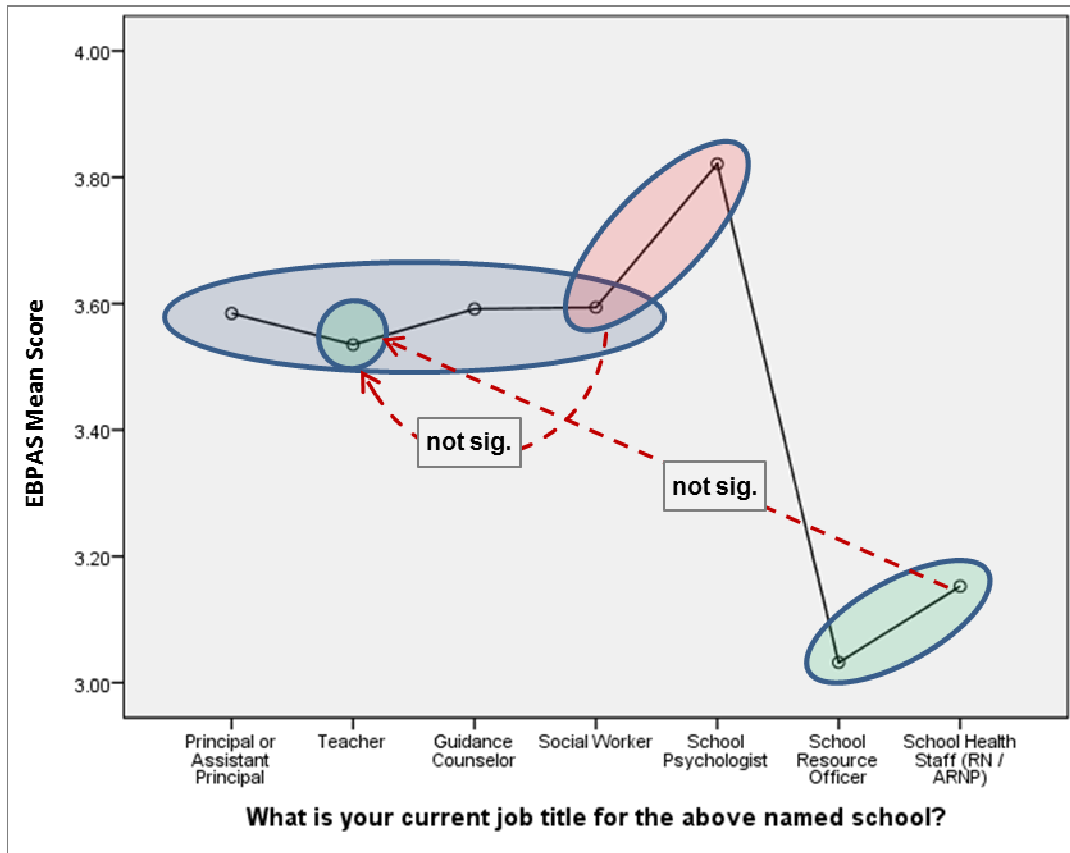
Figure 3. Results of ANOVA and post hoc Tukey test of mean score between group differences for the EBPAS

Multiple Regression

Standard multiple regression. A standard multiple regression model was used to examine the relationship between six independent variables and a single continuous dependent variable. The independent variables used in the regression model included the mean scores for the variables obtained from EFA of three survey scales, namely: Role Identification (2 factors – *Provider* and *Facilitator*), Willingness (1 factor - *Willingness*), and Implementation Facilitators (3 factor – *Overall Structure and Support, Individual*

Support, and *Shared Professional Responsibility*), for a total of 6 predictor variables.

The dependent variable was total scores on the EBPAS. Correlation and regression

analyses were conducted. Examination of Pearson correlation coefficients showed

sufficient relationships among scales, with most coefficients above .3. There were no

bivariate correlations above .7 suggesting no evidence of multicollinearity. This was

confirmed through examination of collinearity statistics; there were no small tolerance

values observed (all were above .10) and no variance inflation factors (VIF) above 10

(Pallant, 2010).

A summary of the model indicates that 29.0% of the variance in EBPAS ($R^2 =$

.29, $F(6,529) = 36.16$, p<.001) is explained by the six predictor variables. Examination

of standardized coefficients (Beta values), revealed that the *Willingness* variable ($\beta = .42$,

p<.001) made the strongest unique contribution to predicting EBPAS outcomes. One

other variable, *Shared Professional Responsibility* also made a significant unique

contribution to the variance in the dependent variable ($\beta = .22$, p<.001). None of the

remaining four variables approached statistical significance.

By looking at the semipartial correlation coefficients, we see that the *Willingness*

variable uniquely explains 7.6% of the total variance. This is found by squaring the Part

coefficient (.277) and expressing the resulting value as a percent; the *Shared Professional*

Responsibility variable uniquely contributes 2.9% of the total variance (Pallant, 2010).

We also note that these two variables are reasonably strongly correlated (r = .54),

suggesting shared variance that is then statistically removed with both variables in the

model.

Table 6 provides results for the standard linear regression.

Table 6. Results of multiple regression analysis of SMH predictors of outcomes on the EPBAS

Variable	B	SE B	β
Provider Role	-0.06	0.04	-0.08
Facilitator Role	0.03	0.04	0.03
Willingness	0.36	0.05	**0.42***
Overall Administrative Structure	0.02	0.05	0.02
Individual Support	-0.02	0.04	-0.02
Shared Professional Responsibility	0.26	0.06	**0.22***

Note: R^2=.29, F(6,529)=36.16*
$*p < .001$

Hierarchical multiple regression. In view of the hypotheses related to study questions, that there are multiple and varied factors related to implementation of mental health services in schools, the notion of the regression model producing only two unique variables seemed conservative. Therefore, hierarchical multiple regression was conducted to determine if the remaining block of variables could account for the additional variance in the dependent variable, once the regression controlled for *Willingness* and *Shared Professional Responsibility*.

The independent and dependent variables remained the same in the hierarchical regression model. In the regression analysis, *Willingness* and *Shared Professional Responsibility* were 'forced' into the first block to statistically control for these variables. The remaining items were then entered together in the second block. Hierarchical regression produced similar results, with Model 1 accounting for 29% of the variance in EBPAS (R^2 = .29, $F(2,533)$ = 107.46, p<.001). Model 2, accounted for 29% of the variance, (R^2 = .29, $F(6,529)$ = 36.16, p<.001) with the change in variance (ΔR^2) equal to .004; this did not represent a significant change in R^2. Again, only two variables, *Willingness* and *Shared Professional Responsibility* made a significant unique contribution to the EBPAS outcome (β = .42, p<.001 and β = .22, p<.001, respectively.)

CHAPTER 5. DISCUSSION

Findings

Generally, this study represents a successful effort in developing a survey to investigate readiness for SMH integration in a unique way for a large urban school district. Multiple levels of school personnel were surveyed simultaneously with the benefit of being able to evaluate between group differences on key domains related to readiness for integration of mental health services in schools. Constructs were identified through EFA, with strong reliability on most factors, and on related survey domains. One-way analysis of variance elicited findings of significant between group differences on variable such as role identification, willingness to participate in tasks associated with SMH integration and implementation facilitators.

Role identification. Professional groups within HCPS do endorse adoption of roles related to school mental health integration. Findings of the present study are in line with the research on roles of school staff in the delivery of mental health services. Administrators such as principals are typically expected to take facilitative roles school mental health services delivery (Cowan, Vaillancourt, Rossen, & Pollitt, 2013). They provide leadership and establish service delivery procedures (Brown, Dahlbeck, & Sparkman-Barnes, 2006; Stephan, Weist, Kataoka, Adelsheim, & Mills, 2007), select and

appoint direct services staff, and also encourage and direct training (Brown, et al, 2006; Zalaquett, 2005). One-way ANOVA with a post hoc Tukey test, and paired sample t-tests showed that principals and assistant principals as a group uniquely identified with the facilitator role, with other professional groups endorsing either a provider role, or no significant difference between roles. Further, it was anticipated that social workers and school psychologists would place themselves highly within both the *Provider* role (Weist, Ambrose, & Lewis, 2006) and the *Facilitator* role (Brown, et al, 2006) and mean scores show that this was in fact the case. Further analysis through paired sample t-tests however, showed that these two groups more strongly endorsed the *Provider* role.

As school mental health and the roles of supportive others expand, guidance counselors are being viewed as having holistic roles that address not only academic and vocational guidance, but personal, social and behavioral issues as well (Cowan, et al, 2013; Watts, 2005). Guidance counselors are viewed as being supportive in the implementation of school mental health through referrals (Chandra & Minkovitz, 2007) and provision of prevention services, (Cowan, et al, 2013), but also in some cases and direct providers of mental health counseling (Chandra & Minkovitz, 2007). The current study supports this view with mean scores showing guidance counselors in the mid-range of scores on both the *Provider* and *Facilitator* roles. However, as with social workers and psychologists, paired sample t-tests show that guidance counselors more strongly endorse the *Provider* role.

We can speculate about the remaining professional groups (teachers, school health, and school resource officers) that did not more strongly identify an affiliation with one role over the other. Mean scores for these groups indicate some role identification.

For example, with regard to the *Facilitator* role, scores for teachers and school health staff were not significantly different from those of guidance counselors who were mid-range scorers. According to recent findings, teachers do in fact play a part in SMH services delivery (Paternite & Johnson, 2005; Rothi, Leavey & Best, 2008). They are expected to have knowledge of resources available to students (Stormont, Herman, Puri, & Goal, 2011) and to be able to recognize warning signs or early symptoms of mental health problems in their students (Loades & Mastroyannopoulou, 2010). Teachers are also seen as being in a position to make appropriate referrals to mental health services (Rothi, et al, 2008). The role of school health staff and specifically school nurses has also been studied, and they too are have been identified as potentially playing a part in identifying problems and symptoms and offering further assessment as well as referral (DeSocio & Hootman, 2004; Pryjmachuk, Graham, Haddad, & Tylee, 2012; Puskar & Bernardo, 2007). These tasks for both groups match most closely with a *Facilitator* role on the SMHSIS.

Finally, for all professional groups, even among lower scorers, no mean scores were in the 1.0 – 2.0 range. According to the Likert scale used for this survey, scores in this range would suggest that these groups see themselves as non-participants in tasks of SMH integration. For this survey, there were no groups that placed themselves in a non-participant category.

Willingness. It is noted that while there were significant differences between groups that scored highest on this scale and those that scored lowest, mean scores for all groups suggest endorsement of willingness to engage in tasks related to SMH services integration. Mean scores were all significantly different from a 'neutral' test value

indicating that all groups endorsed agreement or strong agreement with willingness to engage in specific tasks related to SMH services integration. There has been some investigation into factors that may promote or improve willingness to integrate mental health services within schools (Han & Weiss, 2005; Owens & Murphy, 2004), but willingness as a construct and as factor in readiness for SMH integration in schools has not been widely studied. The SMHSIS has shown utility in better defining willingness as a construct and the results of outcomes across professional groups with regarding to the *Willingness* domain may provide a link to better understanding it as a key factor in SMH integration.

Finally, the role of the *Willingness* variable played as a predictor of attitudes toward EBPs cannot be overlooked. Aarons (2004) notes, "Although structured approaches (e.g. manualization) may aid in the dissemination of EBPs, additional factors must be considered in order to most effectively change treatment practices", (p.71). He goes on to point out that "provider individual differences and contextual variation are important in understanding potential attitudes toward EBPs" (p.71). The SMHSIS takes a step toward understanding willingness to engage in implementation activities as an indicator of attitudes toward EBPs, *regardless* of provider individual differences (i.e. professional group belongingness), contextual variation (i.e. school level), and other intervening factors (i.e. role identification, and administrative and individual support).

Implementation facilitators. The SMHSIS showed utility in identifying facilitators to SMH integration, and also in understanding levels of perception of these facilitators among professionals groups. Mean scores suggest a trend toward recognition of implementation facilitators generally, despite significant differences between groups

85

that scored highest and lowest on these scales.   For *Individual Support* and *Shared Professional Responsibility*, social psychologists and social workers are higher scorers, and school resource officers and school health staff are lower with administrators and guidance counselors in the mid-range. It is noted teachers scored lowest on the scale measuring *Individual Support*. This factor included variables related to training as an element of support. Studies have shown that while teachers generally recognize that they have a role in mental health services delivery, they do not necessarily perceive themselves as having adequate training with regard to recognizing mental health problems among students (Alisic, 2012; Reinke et al., 2011; Rothì et al., 2008; Walter, Gouze, & Lim, 2006). That teachers were low scorers on this domain of the SMHSIS is therefore not surprising and supports existing literature.

With regard to *Overall Administrative Structure* as an implementation facilitator, it was principals and assistant principals as a group that scored the highest. As mentioned HCPS has been actively engaged in SMH integration planning since 2007. Administrators may therefore have a sense of general preparedness for mental health services delivery in their schools and a perception that the structure and protocols for services delivery are in place.

EBPAS. One of the aims of the study was to investigate the utility of a modified version of the *Evidence-Based Practice Attitudes Scale* (EBPAS) for use with school staff respective to school mental health services and to determine if there were in fact significant differences in outcomes on the EBPAS for this group of respondents, by professional group.   Mean scores do show that school staff responding to this survey trend toward overall positive attitudes toward adoption of EBPs. Mean scores for

86

teachers as a group were in the mid- to high-range even though they were among low scorers on other survey domains. As the role of teachers in SMH integration is more closely studied, outcomes for this group may signal a readiness factor for HCPS that can be utilized in expanding interventions that are geared toward the classroom.

Overall impressions. It was anticipated that other variables would be strong predictors of outcomes on the EBPAS scale, and particularly, role adoption by professional groups and specific implementation facilitators that are supported in the literature and being important to implementation, for example training and administrative support (Perez, 2002; Paternite & Johnston, 2005). Moreover, the notion of willingness in school mental health integration has been discussed broadly as a general willingness to try new interventions (Aarons, 2004), and willingness to implement specific interventions (Han & Weiss, 2005). Recall that for the SMHSIS, *Willingness* does not represent general willingness to improve, adopt, integrate, or endorse the idea of school mental health in broad stokes, or the willingness to implement a specific intervention, but rather willingness to take on specific vital tasks related to integration of school mental health services. The SMHSIS looked at the construct of *Willingness* as a facet of role identification. In fact, the segment of the measure dedicated to willingness was written parallel to the section on role identification, such that the survey would in essence ask, "What tasks are associated with your current role?" and "What tasks are you willing to take on?" with regard to mental health services integration. This was done in *recognition* that in the delivery of mental health services in schools, a) there are certain vital tasks to be accomplished, and b) all tasks must be covered by someone. The survey was also constructed in this manner under the *presumption* that, a) all professional groups

87

within schools take on roles to achieve these tasks, and b) given the opportunity, they will self-identify those roles. Finally, the survey writers aimed to answer one more critical question: Given the likelihood of role confusion or role conflict in covering tasks of integration (Weist & Paternite, 2006), would school staff across professional domains endorse willingness to engage in mental health integration tasks regardless of perceptions of certain roles? The survey bears out positive overall endorsement of *Willingness* defined and constructed in this way. Perhaps more important to highlight, however, is the notion that as an indicator of readiness to adopt evidence-based practices, the *Willingness* indicator surpassed all other indicators as having a strong and unique predictive value.

Taken together, these outcomes form the basis for a better understanding the current environment for integration of mental health services delivery in a large urban school district, and indicators for readiness to adopt evidence-based practices. Survey outcomes provide useful information to school administrators and EBP developers on characteristics that can facilitate services integration, and call attention to training and policy needs. More broadly, outcomes potentially contribute to the development of a formalized framework for mental health services delivery in schools. Finally, areas of divergence in beliefs about services delivery, as well as congruence in the attitudes of groups of professional staff have been examined. By engaging various levels and types of school staff simultaneously on a single survey, the survey design has the added value of addressing the need for more complex research methods in the investigation of mental health services in schools.

Study limitations. The SMHSIS is a new survey tool and as such it represents first generation research. The study explored the underlying constructs and structure of

the instrument and reliability of some segments of the survey that were utilized

informally as scales. Further research can help to improve and refine the instrument,

apply techniques for validating it and improve its utility overall. Whereas the survey is

unique in its capacity for studying the responses of several professional groups

simultaneously, it may prove somewhat unwieldy for SMH integration questions that

seek to answer more specific implementation questions with a single group.

It is also noted that through two rounds of grant funding, HCPS has been engaged

in directed efforts to develop avenues to SMH integration. School personnel are likely to

be more engaged in mental health delivery tasks and more familiar with practical action

steps toward improving student access to services. Therefore, good outcomes reported

here as a result of the SMHSIS may not be generalizeable to other school districts. HCPS

also represents a large urban public school district and generalizability of results to

smaller districts, rural locations or other types of school (i.e. private schools) is not

known.   Strategies for improving SMH services delivery based on the results of this

survey may apply uniquely to HCPS.

There were also two limitations noted with regard to survey methods. First,

response rates were low for some groups. School health staff in particular has a very low

response rate of just 15.4%. In light of concerted efforts toward the expanded school

mental health, school health centers, and mental health as an integrated arm of school

health centers, it would seem imperative that school health staff are engaged in the tasks

of SMH integration. Efforts should be made therefore to target these groups in the

conduct of studies such as this one, to better understand the role of school health staff and

their perceptions of implementation facilitators. It would seem that school mental health

cannot be successfully located within the larger domain of school health without the active engagement of school health staff.

Second, sample sizes were very different across professional groups. One issue in using unequal sample sizes for one-way ANOVA is that it can affect the assumption of homogeneity of variance, (Tabachnick& Fidell, 2007) and in these analyses, the assumption was in fact violated. This can lead to an increased rate in Type I error (rejecting a true null hypothesis), and so results are therefore reported conservatively. However, it is also noted that ANOVA is robust to some violation of homogeneity of variance; there is no established rule of thumb with regard to heterogeneity of variance becomes problematic with unequal sample sizes (Keppel, 1993). Naturally power for the analyses is affected, since power is based on the smallest sample size. If other types of analyses were to be conducted with these samples, (i.e. two-way ANOVA), where more than one independent variable are being compared ambiguity of results may increase (Tabachnick & Fidell, 2007). There are methods of dealing with unequal sample sizes when necessary, such as randomly deleting cases from groups with a larger sample size, or using unweighted means analysis (Tabachnick & Fidell, 2007). However, it is important to note that, "differences in sample sizes reflect true differences in numbers of various types of subjects" (Tabachnick & Fidell, 2007, p.49). In this study, principals and assistant principals had the largest sample size; they were also the largest group surveyed. We might postulate that as a group that represents school administration generally, they wield the most influence over how mental health services are structured and delivered. The generalizability of results may be lost if methods to artificially equalize sample size are used (Tabachnick & Fidell, 2007).

Directions for future research. The current study has potential for uncovering opportunities to design formative studies that improve the capacity of schools to provide mental health services. By identifying characteristics (needs, interests, perspectives and behaviors) of target groups, formative research helps establish the basis for the development of communication networks, effective service implementation strategies, and for influencing change. Research and program evaluation efforts that include methods such as key informant interviews, and focus groups around the outcomes of the SMHSIS would be a practical next step in understanding readiness for school mental health integration for this target setting. Further refinement of the instrument is also in order, including efforts to validate instrument scales through methods that address the fit of underlying constructs with similar notions of these constructs by knowledgeable experts.

Implications

Implications for school mental health. Integrated school mental health is not new. The past two decades have seen significant advancement in the development of school mental health programming. Three vital catalysts for the advancement of school mental health have continued to be 1) recognition of the unmet treatment need for children with mental, emotional and behavioral disorders, 2) the good fit that schools are perceived to have in answering this need, and 3) the acknowledgment that in addition to providing access to children in need of prevention and treatment interventions, integrated school mental health also reduces barriers to learning. Noam and Hermann (2003) state, "There is growing recognition that we particularly need programs placed directly in the

natural ecology and developmental context where children grow up…" (p.862). If

schools are to be one such context for children's mental health services delivery, then

studies that support school mental health integration are imperative. The SMHSIS

survey helps to inform this specific school district with regard to its good fit for meeting

the unmet need in school mental health services delivery.

As mentioned, schools are not traditionally arranged for delivery of mental health

services. Further, there is no agreed upon framework with which we might ease the

integration of mental health services into school settings (Burke & Paternite, 2007).

These challenges notwithstanding, we can further our insight into how schools might

become more prepared for mental health integration, for example, by looking at

perspectives across professional groups. Adelman and Taylor (2003) outline major

delivery formats for mental health services in schools, (e.g. mental health units within

school districts, services coordinated with and through community-based providers, and

so forth). These formats, along with an understanding of professional role functions, and

policy mandates at various levels form the context for school mental health services

delivery (Adelman & Taylor, 2003). The SMHSIS looks at some of the organizational

factors, role functions, and implementation facilitators and as such can help inform this

school district of its indicators for mental health integration readiness.

The study has potential for promoting the development of surveys that can elicit

information about critical indicators for school mental health integration, particularly

where there is interest surveying multiple levels of school staff simultaneously. The

SMHSIS also has value in looking at organizational factors specific to school settings,

and perhaps advancing a framework at the organizational level for mental health services

92

delivery in schools. There are opportunities here for designing more formative studies that improve the capacity of schools to provide mental health services. Finally, the survey represents a positive effort toward demonstrating the utility of the EBPAS with a new group of respondents in a novel setting, schools. In this way, evidence-based practice becomes more relevant and apparent to school personnel who are being charged with implementing services that can effectively meet the mental health needs of students.

Implications for children's mental health. Recall that only about one-third of children with mental health needs receive services and that schools are de facto providers of services to children who do receive them. Recall that the primary objective of HCPS in initiating this second mental health services integration project was to increase student access to quality mental health services. Improving access has in fact been identified as critical to addressing the crisis in children's mental health care. Problems with access are especially relevant to ethnic minorities and families with limited financial resources (USDHHS, 2000). Investigation of indicators of SMH integration potentially means improved access to mental health services for children and locating mental health services within schools may serve to level the playing field of access to care. Further, SMH integration research can move us away from the *de facto* school setting for mental health care, to schools being *de jure* providers, or rightful providers by deliberate design.

Children's mental health is addressed directly and indirectly in the President's New Freedom Commission Report which has identified key objectives that impact how we proceed with efforts in children's mental health: 1) promotion of the mental health of children; 2) improving and expanding school mental health; and 3) advancing evidence-based practice (Hogan, 2003). The report is cross-cutting, and advances the notion that

93

improving children's mental health is linked to the expansion of school mental health and the promotion of evidence-based practice. The present study is also cross-cutting, and touches on each of these directives in the promotion of children's mental health. Even with small studies such as this, there is potential to contribute incrementally to the knowledge base on readiness to engage in integrated SMH and to adopt those practices that have been identified as effective.

Implications for public health.   Some of the barriers to school mental health integration have been discussed. Let's also consider as barriers, the trend for schools to target children at the highest levels of need, or who are at greatest risk (Adelman & Taylor, 2003), and a tendency toward a narrow focus on factors of risk, to the exclusion of activities that are about health promotion, protection and resilience (Sheridan & Gutkin, 2000). Hillsborough County Public Schools is engaged in the promotion of a public health, three-tiered model which accounts for primary (universal) prevention, secondary (targeted) interventions, and tertiary (intensive) approaches. This study helps to locate school mental health and children's mental health within a Public Health Model, thereby advancing the model in these areas. Kia-Keating, et al., (Kia-Keating, Dowdy, Morgan, & Noam, 2011) call for "renewed and sustained attention to this model" (p.225), if we are to promote the healthy development of children.

Also note that public health is primarily concerned with reducing the overall burden of disease, particularly for those populations that are most vulnerable to it. Evidence-based practices are those interventions shown to be effective and that have the capacity for producing desired outcomes with regard to the prevention or treatment of the conditions and with the populations for which they were developed. With widespread

adoption of EBPs we may therefore expect reductions in incidence and prevalence of those conditions for those populations.

More broadly, mental disorders contribute significantly to long-term disability and mortality. The contribution that mental disorders make to the extent and progression of disability is complex, and their interaction with other health conditions confounding (Prince, et al., 2007). Prince and colleagues (2007) affirm that there is "no health without mental health" (p. 859). As such, mental health needs to be wholly integrated into all facets of health care, but perhaps especially into health policy development and the planning of health care delivery systems. School mental health integration research tells us something about where schools are in the arrangement of mental health services delivery. It provides a platform for policy development in the interest of wholesale school mental health integration.

LIST OF REFERENCES

Aarons, G. A. (2004). Mental health provider attitudes toward adoption of evidence-based practice: The evidence-based practice attitude scale. *Mental Health Services Research*, *6*(2), 61-74.

Aarons, G. A. (2005). Measuring provider attitudes toward evidence-based practice: Consideration of organizational context and individual differences. *Child and Adolescent Psychiatric Clinics of North America, 14,* 255–271.

Aarons, G. A. (2006). Transformational and transactional leadership: Association with attitudes toward evidence-based practice. *Psychiatric Services, 57,* 1162–1169.

Aarons, G. A., McDonald, E. J., Sheehan, A. K., & Walrath-Greene, C. M. (2007). Confirmatory factor analysis of the Evidence-Based Practice Attitude Scale (EBPAS) in a geographically diverse sample of community mental health providers. *Administration and Policy in Mental Health and Mental Health Services Research*, *34*(5), 465-469.

Aarons, G. A., Glisson, C., Hoagwood, K., Kelleher, K., Landsverk, J., & Cafri, G. (2010). Psychometric properties and US national norms of the Evidence-Based Practice Attitude Scale (EBPAS). *Psychological Assessment*, *22*(2), 356.

Aarons, G. A., & Sawitzky, A. (2006). Organizational culture and climate and mental health provider attitudes toward evidence-based practice. *Psychological Services, 3,* 61–72.

Aarons, G. A., Sommerfeld, D. H., & Walrath-Greene, C. M. (2009). Evidence-based practice implementation: the impact of public versus private sector organization type on organizational support, provider attitudes, and adoption of evidence-based practice. *Implementation Science, 31*(4),160-169.

Aarons, G. A., Wells, R., Zagursky, K., Fettes, D. L., & Palinkas, L. A. (2009). Implementing evidence-based practice in community mental health agencies: A multiple stakeholders analysis. *American Journal of Public Health, 99*(11), 2087-2095.

Achenbach, T. M. (2005). Advancing assessment of children and adolescents: commentary on evidence-based assessment of child and adolescent disorders. *Journal of Clinical Child and Adolescent Psychology, 34*(3), 541-547.

Adams, S., & McCarthy, A. M. (2005). Evidence-based practice and school nursing. *Journal of School Nursing, 21*, 258–265.

Adelman, H. S., & Taylor, L. (2003). Toward a comprehensive policy vision for mental health in schools. In Weist, M. D., Evans, S. W. & Lever, N. A. (Eds.), *Handbook of School Mental Health: Advancing Practice and Research* (pp. 23-43). New York: Kluwer Academic/Plenum Publishers.

Alisic, E. (2012). Teachers' perspectives on providing support to children after trauma: A qualitative study. *School Psychology Quarterly, 27*(1), 51-59.

American Psychiatric Association (Ed.). (2000). Diagnostic and statistical manual of mental disorders: DSM-IV-TR®. American Psychiatric Pub

Anglin, T.M. Mental health in schools: Programs of the federal government. In: Weist, M.D., Evans, S.W., Lever, N.A., eds. *Handbook of School Mental Health Programs: Advancing Practice and Research.* Norwell, MA: Kluwer Academic Publishers, 2003.

Armstrong, K. H., Massey, O. T., & Boroughs, M. (2003). Safe schools/Healthy students initiative: Pinellas County, Florida. *Psychology in the Schools, Vol. 40*(5), 489-501.

Astor, R., Behre, W., Wallace, J., & Fravil, K. (1998). School social workers and school violence: Personal safety, training, and violence programs. *Social Work,43,* 223–232.

Astor, R. A., Pitner, R. O., & Duncan, B. B. (1996). Ecological approaches to mental health consolation with teachers on issues related to youth and school violence. *Journal of Negro Education*, *65*(3), 336–355.

Atkins, M. S., Fraizer, S. L., Adil, J. A., & Talbott, E. (2003). School-based mental health services in urban communities. In Weist, M. D., Evans, S. W. & Lever, N. A. (Eds.), *Handbook of School Mental Health: Advancing Practice and Research* (pp. 165-178). New York: Kluwer Academic/Plenum Publishers.

Atkins, M., Frazier, S., Leathers, S., Graczyk, P., Talbott, E., Adil, J., et al. (2008). Teacher key opinion leaders and mental health consultation in urban low-income schools. *Journal of Consulting and Clinical Psychology, 76*, 905–908.

Atkins, M. S., Graczyk, P. A., Frazier, S. L., & Abdul-Adil, J. (2003). Toward a new model for promoting urban children's mental health: Accessible, effective and sustainable school-based mental health services. *School Psychology Review, 32*(4), 503-514.

Atkins, M., Hoagwood, K., Kutash, K., & Seidman, E. (2010). Towards the integration of education and mental health in schools. *Administration and Policy in Mental Health and Mental Health Services Research*, *37*, 40–47.

Atkins, M. S., McKernan, McKay, M., Arvanitis, P., London, L., Madison, S., Costigan, C.,…Webster, D. (1998). An ecological model for school-based mental health services for urban low-income aggressive children. *The Journal of Behavioral Health Services & Research, 5*, 1, 64-71.

Bartholomew, L. K., Parcel, G. S., Kok, G., & Gottlieb, N. H. (2001). *Intervention-Mapping: Designing Theory and Evidence-Based Health Promotion Programs*. Mountain View, CA:Mayfield; 2001.

Barton-Arwood, S. M., Wehby, J. H., & Falk, K. B. (2005). Reading instruction for elementary age students with emotional and behavioral disorders: Academic and behavioral outcomes. *Exceptional Children, 72*, 7-27.

Belfer, M. L. (2008). Child and adolescent mental disorders: The magnitude of the problem across the globe. *Journal of Child Psychology and Psychiatry, 49*, 226-236.

Bowen, G. L., Rose, R. A., & Ware, W. B. (2006). The reliability and validity of the School Success Profile Learning Organization Measure. *Evaluation and Program Planning, 29,* 97–104.

Bradshaw, C. P., Buckley, J. A., & Ialongo, N. S. (2008). School-based service utilization among urban children with early onset educational and mental health problems: The squeaky wheel phenomenon. *School Psychology Quarterly, 23*, 169-186.

Bramlett. R. K.. Murphy. J. J., Johnson. J., Wallingsford, L., & Hall, J. D. (2002). Contemporary practices in school psychology: A national survey of roles and referral problems. *Psychology in the Schools. 39,* 327-335.

Brener, N. D., Martindale, J., & Weist, M. D. (2001). Mental health and social services: Results
from the school health policies and programs study 2000. *Journal of School Health, 71,*
305–312.

Brown, J.D., Riley, A.W., Wissow, L.S. (2007). Identification of youth psychosocial issues during pediatric primary care visits. *Administration and Policy in Mental Health and Mental Health Services Research, 34*, 3, 269-281.

Buckner, J.D., Schmidt, N.B., Lang, A.R., Small, J.W., Schlauch, R.C., & Lewisohn, P.M. (2008). Specificity of social anxiety disorder as a risk factor for alcohol and cannabis dependence. *Journal of Psychiatric Research 42*(3), 230-239.

Burke, R. W., & Paternite, C. E. (2007). Teacher engagement in expanded school mental health. *Report on Emotional and Behavioral Disorders in Youth*, *7*(1), 3-27.

Burns, B.J., Costello, E.J., Angold, A., Tweed, D, Stangl, D., Farmer, E.M., & Erklani, A. (1995). Children's mental health services use across services sectors. *Health Affairs, 14*, 147–159.

Burton D.L., Hanson A., Levin, B.L., & Massey, O.T. School mental health. In: Shally-Jensen, M. eds. *Mental Health Care Issues in America.* Santa Barbara, CA: ABC-CLIO, 2013.

Canino, G., Costello, E.J.,&Angold, A. (1999). Assessing functional impairment and social adaptation of child mental health services research: A review of measures. Mental Health Services Research, 1, 93–108.

Canino, G., Shrout, P. E., Rubio-Stipec, M., Bird, H. R., Bravo, M., Ramirez, R., et al. (2004). The DSM-IV rates of child and adolescents disorders in Puerto Rico. *Archives of General Psychiatry, 61*, 85-93.

Cappella, E., Frazier, S. L., Atkins, M. S., Schoenwald, S. K., & Glisson, C. (2008). Enhancing schools' capacity to support children in poverty: An ecological model of school-based mental health services. *Administration and Policy in Mental Health and Mental Health Services Research, 35*, 395–409.

Carlson, C., Paavola, J., & Talley, R. (1995). Historical, current and future models of schools as health care delivery settings. *School Psychology Quarterly, 10,* 184-202.

Case, B. G., Olfson, M., Marcus, S. C., & Siegel, C. (2007). Trends in the inpatient mental health treatment of children and adolescents in US community hospital between 1990 and 2000. *Archives of General Psychiatry, 64*, 89-96.

Center for Mental Health in Schools. (2005). Addressing what's missing in school improvement
planning: Expanding standards and accountability to encompass an enabling or learning supports component. Retrieved January 14, 2012, from http://smhp.psych.ucla.edu/pdfdocs/enabling/standards.pdf

Center for Mental Health in Schools at UCLA. (2006a). *The Current Status of Mental Health in Schools: A Policy and Practice Analysis.* Los Angeles, CA: University of California Los Angeles.

Center for Mental Health in Schools at UCLA. (2006b). *The Current Status of Mental Health in Schools: A Policy and Practice Analysis: Executive Summary.* Los Angeles, CA: University of California Los Angeles.

Centers for Disease Control and Prevention. YRBSS: Youth Risk Behavior Surveillance System. Retrieved March 31, 2012, from http://www.cdc.gov/HealthyYouth/yrbs/index.htm

Cohen, P., Cohen, J., Kasen, S., Velez, C. N., Hartmark, C., Johnson, J., ... & Streuning, E. L. (1993). An Epidemiological Study of Disorders in Late Childhood and Adolescence—I. Age-and Gender-Specific Prevalence. *Journal of Child Psychology and Psychiatry*, *34*(6), 851-867.

Commonwealth of Virginia Commission on Youth. *School-Based Mental Health Services*. Retrieved July 07, 2011, from http://coy.state.va.us/vcoy/PDFfiles/School-basedMentalHealthServices_0.pdf.

Costello, E.J., Egger, H., & Angold, A. (2005). 10-year research update review: The epidemiology of child and adolescent psychiatric disorders: I. Methods and public health burden. *Journal of the American Academy of Child and Adolescent Psychiatry, 44*(10), 972–986.

Costello, E.J., Foley, D.L., & Angold, A. (2006). 10-year research update: The epidemiology of child and adolescent psychiatric disorders: II. Developmental epidemiology. Journal of the American Academy of Child and Adolescent Psychiatry, 45, 8–25.

Costello, E.J., Mustillo, S., Keeler, G., & Angold, A., (2004). Prevalence of psychiatric disorders in childhood and adolescents. In In: Levin, B. L., Petrila, J., & Hennessy, K., eds. *Mental Health Services - A Public Health Perspective,* New York, NY: Oxford University Press, Inc. 2004.

Cowan, K.C., Vaillancourt, K., Rossen, E., & Pollitt, K. (2013). A framework for safe and successful schools. Bethesda, MD: National Association of School Psychologists.

Curtis,M. J., Lopez, A. D., Castillo, J.M., Batsche, G. M.,Minch, D., & Smith, J. C. (2008). The status of school psychology: Demographic characteristics, employment conditions, professional practices, and continuing professional development. *Communiqu´e, 36,* 27 – 29.

DeSocio, J., & Hootman, J. (2004). Children's mental health and school success. *The Journal of School Nursing*, *20*(4), 189-196.

Donaldson, N. E., Rutledge, D. N., & Ashley, J. (2004). Outcomes of adoption. *Worldviews on Evidence-Based Nursing, S1*, S41-S51.

Drake, R. E., Essock, S. M., Shaner, A., Carey, K. B., Kenneth, M., Kola, L., Lynde, D., Osher, F. C., Clark, R. E., & Rickards, L. (2001). Implementing Dual Diagnosis Services for Clients With Severe Mental Illness. *Psychiatric Services*, *52*, 469-476.

Dusenbury, L., Brannigan, R., Falco, M., & Hansen, W. B. (2003). A review of research on fidelity of implementation: implications for drug abuse prevention in school settings. *Health Education Research, 18*(2), 237-256.

Farmer, E. M., Burns, B. J., Phillips, S. D., Angold, A., & Costello, E. J. (2003). Pathways into and through mental health services for children and adolescents. Psychiatric Services, 54(1), 60–66.

Florida Department of Children and Families (FDCF), Substance Abuse and Mental Health (2009). Florida Youth Substance Abuse Survey (FYSAS). Retrieved May 30, 2011, from http://www.dcf.state.fl.us/programs/samh/publications/fysas.

Ford, T. (2008). Practitioner review: How can epidemiology help us plan and deliver effective child and adolescent mental health services? *Journal of Child Psychology and Psychiatry, 49*, 900-914.

Foster, E.M. & Jones, D.E. (2005). The high costs of aggression: Public expenditures resulting from conduct disorder. *American Journal of Public Health, 95*, 10, 1767-1772.

Franklin, C. G., & Kelly, M. S. (2009). Becoming evidence-informed in the real world of school social work practice. *Children and Schools, 31*, 46–56.

Gale, B. V., & Schaffer, M. A. (2009). Organizational readiness for evidence-based practice. *Journal of Nursing Administration, 39*(2), 91-97.

Gambrill, E. (1999). Evidence-based practice: An alternative to authority-based practice. *Families in Society: The Journal of Contemporary Human Services, 80*(4), 341–350.

Gibbs, L. E., & Gambrill, L. (2002). Evidence-based practice: Counterarguments to objections. *Research on Social Work Practice, 12*(3), 452–476.

Glasgow, R.E., & Emmons, K.E. (2007). How can we increase translation of research into practice? Types of evidence needed. *American Review of Public Health, 28*, 413-433.

Glisson, C. & Schoenwald, S.K., (2005). The ARC organizational and community intervention strategy for implementing evidence-based children's mental health treatments. M*ental Health Services Research*, 7(4).

Greenberg, M. T., Domitrovich, C., & Bumbarger, B. (2001). The prevention of mental disorders in school-age children: Current state of the field. *Prevention and Treatment*, 4, Article 1.

Green-Hennessy, S. Children and adolescents. In: Levin, B. L., Hennessy, K. D., Petrila, J., eds. *Mental Health Services - A Public Health Perspective,* New York, NY: Oxford University Press, Inc. 2010.

Hallfors, D., & Godette, D. (2002). Will the 'principles of effectiveness' improve prevention practice? Early findings from a diffusion study. *Health Education Research, 17*(4), 461-470.

Han, S. S., & Weiss, B. (2005). Sustainability of teacher implementation of school-based mental health programs. Journal of abnormal child psychology, 33(6), 665-679.

Hayatbakhsh, M.R., McGee, T.R., Bor, W., Najman, J.M., Jamrozik, K., & Marmun, A.A. (2008). Child and adolescent externalizing behavior and cannabis use disorder in early adulthood: An Australian prospective birth cohort study. *Addictive Behaviors 33*(3), 422-438.

Haynes, N.M., Comer, J.P., & Hamiliton-Lee, H.M. (1989). School climate enhancement through parental involvement. *Journal of School Psychology, 27*, 87-90.

Henggeler, S. W., Pickrel, S. G., & Brondino, M. J. (1999). Multisystemic treatment of substance-abusing and dependent delinquents: Outcomes, treatment, fidelity, and transportability. *Mental Health Services Research, 1,* 171– 184.

Hillsborough County Public Schools. (2010). *Department of Education grant application narrative: Integrating schools and mental health systems.* Tampa, FL.

Hoagwood, K. (2003-2004). Evidence-based practice in child and adolescent mental health: Its meaning, application, and limitations. *Emotional and Behavioral Disorders in Youth, 4,* 7–8.

Hoagwood, K. E., Olin, S. S., Kerker, B. D., Kratochwill, T. R., Crowe, M., & Saka, N. (2007). Empirically based school interventions targeted at academic and mental health functioning. *Journal of Emotional and Behavioral Disorders, 15,* 66–92.

Hogan, M. F. (2003). New Freedom Commission report: The president's New Freedom Commission: recommendations to transform mental health care in America. *Psychiatric Services*, *54*(11), 1467-1474.

Hosp, J.L., & Reschly, D.J. (2002). Predictors of restrictiveness of placement for African American and Caucasian students. *Exceptional Children, 68,* 225-238.

Hudziak, J. J., Achenbach, T. M., Althoff, R. R., Pine, D. S. (2007). A dimensional approach to developmental psychopathology. *International Journal of Methods in Psychiatric Research, 16*(suppl 1), S16-S23.

Individuals with Disabilities Education Improvement Act of 2004, 20 U.S.C. 1400 et seq. (2004) (Reauthorization of the Individuals with Disabilities Education Act).

Institute of Medicine. (2001). Health and behavior: The interplay of biological, behavioral, and societal influences. Washington, D.C.: National Academies Press.

Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (2008). *Monitoring the Future national results on adolescent drug use: Overview of key findings, 2007* (NIH Publication No. 08-6418). Bethesda, MD: National Institute on Drug Abuse.

Kataoka, S. H., Zhang, L., & Wells, K. B. (2002). Unmet need for mental health care among U.S. children: Variation by ethnicity and insurance status. *American Journal of Psychiatry, 159*, 1548-1555.

Kaufman, P., Alt, M. N., & Chapman, C. (2004). Dropout rates in the United States: 2001 (NCES 2005-046). US Department of Education. National Center for Education Statistics. Washington, DC: US Government Printing Office.

Keppel, G. (1993). *Design and Analysis: A researcher's handbook.* Englewood Cliffs: Prentice Hall.

Kerner, J., Rimer, B., & Emmons, K. (2005). Dissemination research and research Dissemination: How can we close the gap? *Health Psychology, 24*(5), 443-446.

Kia-Keating, M., Dowdy, E., Morgan, M. L., & Noam, G. G. (2011). Protecting and promoting: An integrative conceptual model for healthy development of adolescents. *Journal of Adolescent Health*, *48*(3), 220-228.

Kim-Cohen, J., Caspi, A., Moffitt, T. E., Harrington, H., Milne, B. J., Poulton, R. (2003). Prior juvenile diagnoses in adults with mental disorders: Developmental follow-back of a prospective-longitudinal cohort. *Archives of General Psychiatry, 60*, 709-717.

Kratochwill, T. R. (2007). Preparing psychologists for evidence-based school practice: Lessons learned and challenges ahead. *American Psychologist, 62*(8), 843-845.

Kratochwill, T. R., & Shernoff, E. S. (2004). Evidence-based practice: promoting evidence-based interventions in school psychology. *School Psychology Review, 33*, 1, 34-48.

Kutash, K., Duchnowski, A. J., & Lynn, N. (2006). *School-based mental health: An empirical guide for decision-makers.* Tampa: University of South Florida, The Louis de la Parte Florida Mental Health Institute, Department of Child and Family Studies, Research and Training Center for Mental Health.

Lambert, N.M., Bower, E.M., Kaplan, G., Duggan, J.N., Hollister, W.G., Klein, D.C., & Sanford, N., et al. (1965). The protection and promotion of mental health in schools *Mental Health Monograph Series, no. 5,* Bethesda, MD: National Institute of Mental Health.

Langley, A. K., Nadeem, E., Kataoka, S. H., Stein, B. D., & Jaycox, L. H. (2010). Evidence-based mental health programs in schools: Barriers and facilitators of successful implementation. *School Mental Health, 2*, 105–113.

Leaf, P.J., Schultz, D., Kiser, L.J., & Pruitt, D.B. School mental health in systems of care. In: Weist, M.D., Evans, S.W., Lever, N.A., eds. *Handbook of School Mental Health: Advancing Practice and Research,* New York, NY: Kluwer Academic/Plenum Publisher, 2003.

Lenfant, C. (2003). Clinical research into clinical practice – Lost in translation? *The New England Journal of Medicine, 349*(9), 868-874.

Lewin, K., & Cartwright, D. *Field Theory in Social Science.* New York: Harper, 1951.

Loades, M. E., & Mastroyannopoulou, K. (2010). Teachers' Recognition of Children's Mental Health Problems. *Child and Adolescent Mental Health, 15*(3), 150-156.

Marsh, D. T. (2004). Serious emotional disturbance in children and adolescents: Opportunities and challenges for psychologists. *Professional Psychology Research and Practice*, *35*(5), 443-448.

Marsh, E. J., Hunsley, J. (2005). Evidence-based assessment of child and adolescent disorders: issues and challenges. *Journal of Clinical Child & Adolescent Psychology, 34*(3), 362-379.

Mayer, G. R., Butterworth, T., Nafpaktitis, M., & Sulzer-Azaroff, B. (1983). Preventing school vandalism and improving discipline: A three-year study. *Journal of Applied Behavior Analysis, 16,* 355-369.

McDonnell, L. M. (2005). No Child Left Behind and the federal role in education: Evolution or revolution?. *Peabody Journal of Education*, *80*(2), 19-38.

McDonnell, M. A., & Glod, C. (2003). Prevalence of psychopathology in preschool-age children. *Journal of Child and Adolescent Psychiatric Nursing, 16*, 141-152.

McGee, R., Feehan, M., Williams, S., Anderson, J. (1992). DSM-III disorders from age 11 to age 15 years. *Journal of the American Academy of Child and Adolescent Psychiatry, 31*, 50-59.

Merikangas, K. R., He, J. P., Brody, D., Fisher, P. W., Bourdon, K., & Koretz, D. S. (2010a). Prevalence and treatment of mental disorders among US children in the 2001-2004 NHANES. *Pediatrics, 125*, 75-81.

Merikangas, K. R., He, J., Burstein, M., Swanson, S. A., Avenevoli, S., Cui, L., Benjet, C., Georgiades, K., & Swendsen, J. (2010b). Lifetime prevalence of mental disorders in U.S. adolescents: Results from the National Comorbidity Survey Replication–Adolescent Supplement (NCS-A). *Journal of the American Academy of Child and Adolescent Psychiatry, 49*(10), 980-989.

Merrell, K. W., & Buchanan, R. S. (2006). Intervention selection in school-based practice: Using public health models to increase systems capacity in schools. *School Psychology Review, 35*, 167–180.

National Association of Counties. Retrieved May 20, 2011, from http://www.naco.org/Counties/Pages/CitySearch.aspx)

Noam, G. G., & Hermann, C. A. (2002). Where education and mental health meet: Developmental prevention and early intervention in schools. *Development and Psychopathology*, *14*(4), 861-875

Nunnally, J.O. (1978). Psychometric theory. New York: McGraw-Hill.

O'Rourke, N., Hatcher, L., & Stepanski, E. J. (2005). *A step-by-step approach to using SAS for univariate & multivariate statistics*. SAS Institute

Osganian, S. K., Parcel, G. S., & Stone, E. J. (2003). Institutionalization of a school health promotion program: Background and rationale of the catch-on study. *Health Education & Research, 30*, 410-417.

Owens, J. S., & Murphy, C. E. (2004). Effectiveness research in the context of school-based mental health. Clinical Child and Family Psychology Review, 7(4), 195-209.

Pallant, J. (2010). SPSS survival manual: A step by step guide to data analysis using SPSS. Open University Press.

Pankratz, M. M., & Hallfors, D. D. (2004). Implementing evidence-based substance use prevention curricula in North Carolina public school districts. *Journal of School Health, 74*(9), 353-358.

Paternite, C. E., & Johnston, T. C. (2005). Rationale and strategies for central involvement of educators in effective school-based mental health programs. *Journal of Youth and Adolescence, 34*(1), 41-49.

Patton, G. C., Hetrick, S.E., & McGorry, P. (2007). Service responses for youth onset mental disorders. *Current Opinion in Psychiatry, 20*(4), 319-324.

Pottick, K. L., Warner, L. A., Issacs, M., Henderson, M. J., Milazzo-Sayre, L., & Manderscheid, R. W. (2004). Children and adolescents admitted to specialty mental health care programs in the United States, 1986 and 1997. In R. W. Manderscheid & M. J. Henderson (Eds.), *Mental Health, United States, 2002* (pp. 314-326). DHHS Publication No. (SMA) 3938. Rockville, MD: Substance Abuse and Mental Health Services Administration.

Powers, J.D., Bowen, N.K., & Bowen, G.L. (2010). Evidence-based programs in schools: Barriers and recent advances. *Journal of Evidence-Based Social Work, 7*(4), 313-331.

Prince, M., Patel, V., Saxena, S., Maj, M., Maselko, J., Phillips, M. R., & Rahman, A. (2007). No health without mental health. *The Lancet*, *370*(9590), 859-877.

Proctor, E. K., Knudson, K. J., Fedoravicius, N., Hovmand, P., Rosen, A., & Perron, B. (2007). Implementation of Evidence-Based Practice in Community Behavioral Health: Agency Director Perspectives. *Administration and Policy in Mental Health* and *Mental Health Services Research*, *34(5)*, 479-488.

Pryjmachuk, S., Graham, T., Haddad, M., & Tylee, A. (2012). School nurses' perspectives on managing mental health problems in children and young people. *Journal of Clinical Nursing, 21*(5-6), 850-859.

Puskar, K. R., & Bernardo, L. M. (2007). Mental health and academic achievement: Role of school nurses. *Journal for Specialists in Pediatric Nursing, 12,* 215–223.

Raines, J. C. (2008). Evidence-based practice in school mental health. New York: Oxford University Press.

Reid, R., Gonzalez, J. E., Nordess, P. D., Trout, A., & Epstein, M. H. (2004). A meta-analysis of the academic status of students with emotional/ behavioral disturbance. *Journal of Special Education, 38*, 130-143.

Reinke, W. M., Stormont, M., Herman, K. C., Puri, R., & Goel, N. (2011). Supporting children's mental health in schools: Teacher perceptions of needs, roles, and barriers. *School Psychology Quarterly, 26*(1), 1-13.

Ringwalt, C., Hanley, S., Vincus, A. A., Ennett, S.T., Rohrbach, L.A., & Bowling, M.J. (2008). The prevalence of effective substance abuse prevention curricula in the nation's high schools. *Journal of Primary Prevention, 29*(6), 479-488.

Ringwalt, C., Vincus, A. A., Hanley, S., Ennett, S.T., Bowling, M.J., & Rorhbach, L.A. (2009). The prevalence of evidence-based drug use prevention curricula in U.S. middle schools in 2005. *Prevention Science, 10*(1), 33-40.

Rogers, E. M. (2003). Diffusion of Innovations, 5th ed. New York, NY: Free Press.

Rohrbach, L. A., Grana, R., Sussman, S., & Valente, T. W. (2006). Type II translation: Transporting prevention interventions from research to real-world settings. *Evaluation and the Health Professions, 29*, 302-333.

Rohrbach, L. A., Gunning, M., Sun, P., Sussman, S. (2009). The Project Towards No Drug Abuse (TND) dissemination trial: Implementation fidelity and immediate outcomes. *Prevention Science, 11*(1), 77-88.

Romano, E., Tremblay, R. E., Vitaro, F., Zoccolillo, M., & Pagani, L. (2001). Prevalence of psychiatric diagnoses and the role of perceived impairment: findings from an adolescent community sample. *Journal of Child Psychology and Psychiatry*, *42*(04), 451-461.

Rothì, D. M., Leavey, G., & Best, R. (2008). On the front-line: Teachers as active observers of pupils' mental health. *Teaching and Teacher Education, 24*(5), 1217-1231.

Sallis, J.F., Owen, N., & Fisher, E.B. Ecological models of health behavior. In: Glanz, K., Rimer, B.K., Viswanath, K., eds. *Health Behavior and Health Education – Theory, Research and Practice, Fouth Edition.,* San Francisco, CA: John Wiley & Sons, Inc. 2008.

Schaughency, E., & Ervin, R. (2006). Building capacity to implement and sustain effective practices to better serve children. *School Psychology Review, 35*(2), 15–166.

Senge, P. (1990). The fifth discipline: *The Art and Practice of Learning Organization.* New York: Currency Doubleday

Skovgaard, A. M., Houmann, T., Christiansen, E., Landorph, S., Jorgensen, T., Olsen, E. M., et al. (2007). The prevalence of mental health problems in children 1½ years of age – The Copenhagen Child Cohort 2000. *Journal of Child Psychology and Psychiatry, 48*, 62-70.

Stephan, S. H., Weist, M., Katoka, S., Adelsheim, S., & Mills, C. M. (2007). Transformation
of children's mental health services: The role of school mental health. *Psychiatric Services, 58,* 1330–1338.

Storch E. A., Crisp, H. L. (2004). Taking it to the schools – Transporting empirically
supported treatments for childhood psychopathology to the school setting. *Clinical Child and Family Psychology Review, 7*, 4, 191-193.

Stormont, M., Reinke, W., & Herman, K. (2011). Teachers' knowledge of evidence-
based interventions and available school resources for children with emotional and behavioral problems. *Journal of Behavioral Education, 20*(2), 138-147.

Suldo, S.M., Friedrich, A., & Michalowski, J. (2010). Personal and systems-level factors
that limit and facilitate school psychologists' involvement in school-based mental health services. *Psychology in the Schools, 47*, 4, 354-373.

Swadi, H. (1999). Individual risk factors for adolescent substance abuse. *Drug and
Alcohol Dependence 55*(3), 209-224.

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Boston,
MA: Pearson Education Inc.

Trout, A. L., Nordness, P. D., Pierce, C. D., & Epstein, M. H. (2003). Research on the
academic status of children with emotional and behavioral disorders: A review of the literature from 1961 to 2000. *Journal of Emotional and Behavioral Disorders, 11,* 198-210.

U.S. Department of Health and Human Services. (1999). Mental Health: A Report of the
Surgeon General. Rockville, MD: U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services, National Institutes of Health, National Institutes of Mental Health.

U.S. Department of Health and Human Services. (2001). *Mental health:Culture, race,
and ethnicity—A supplement to Mental Health: A Reportof the Surgeon General.* Rockville, MD: U.S. Public Health Service. 2000.

U.S. Department of Health and Human Services Drugs (2007). *Brains and Behavior –
The Science of Addiction*. NIDA Publication No. 07-5605, Bethesda, MD: National Institute on Drug Abuse.

U.S. Department of Health and Human Services (2009). *NIDA InfoFacts – High School
and Youth Trends*. Retrieved May 20, 2011, from http://www.drugabuse.gov/Infofacts/HSYouthtrends.html.

U.S. Department of Health and Human Services, National Institutes of Health. National Library of Medicine. Images from the History of the Public Health Service. Retrieved August 12, 2010, from http://www.nlm.nih.gov/exhibition/phs_history/121.html.

U.S. Public Health Service. (2000). Report of the Surgeon General's Conference on Children's Mental Health: A National Action Agenda. Washington, DC: Department of Health and Human Services.

Wadsworth, M. E., & Achenbach, T. M. (2005). Explaining the link between low socioeconomic status and psychopathology: Testing two mechanisms of the social causation hypothesis. *Journal of Consulting and Clinical Psychology, 73,* 1146–1153.

Walker, H. M. (2004). Use of evidence-based interventions in schools: Where we've been, where we are, and where we need to go [Commentary]. *School Psychology Review, 33,* 398–407.

Walter, H. J., Gouze, K., & Lim, K. G. (2006). Teachers' Beliefs About Mental Health Needs in Inner City Elementary Schools. *Journal of the American Academy of Child & Adolescent Psychiatry, 45*(1), 61-68.

Walter, I., Nutley, S. M., & Davies, H. T. O. (2005). What works to promote evidence-based policy and practice? A cross-sector review. *Evidence & Policy*; *1*(3), 335-364.

Watkins, M. W. (2000). Monte Carlo PCA for parallel analysis [computer software]. *State College, PA: Ed & Psych Associates*

Watson, A., Miller, F., & Lyons, J. (2005). Adolescents' attitudes toward serious mental illness. *Journal of Nervous and Mental Disease, 193,* 769-772.

Weist, M. D., Grady Ambrose, M., & Lewis, C. P. (2006). Expanded school mental health: A collaborative community-school example. *Children & Schools, 28*(1), 45-50.

Weisz, J.R., & Hawley, K.M. (2002). Developmental factors in the treatment of adolescents. *Journal of Consulting and Clinical Psychology, 70*, 21-43.

West, J., Mudrick, N., Mlawler, M.A., Lipton, D., Cutler, J., Drimmer, A.,… Sampogna, C. *Back to School on Civil Rights: Advancing the Federal Commitment to Leave No Child Behind*. Washington, DC: National Council on Disability, 2000.

Wilson, K., Pruitt, B. E., & Goodson, P. (2008). The impact of middle school principals on adoption of abstinence-only-until-marriage programs in their school's curriculum. *American Journal of Health Education, 39*(5), 258-271.

World Health Organization. (2003). Framework convention on tobacco control. Retrieved February 16, 2012, from http://www.who.int/tobacco/framework/WHO_FCTC_english.pdf

World Health Organization. (2004). Global strategy on diet, physical activity, and health. Retrieved February 16, 2012, from http://www.who.int/gb/ebwha/pdf_files/WHA57/A57_R17-en.pdf

Yampolskaya, S., Massey, O.T., & Greenbaum, P.E. (2006) At-risk high school students in the "Gaining Early Awareness and Readiness Program" (GEAR UP): Academic and behavioral outcomes. *The Journal of Primary Prevention, 27,* 5, 457-475.

APPENDICES

Appendix A: School Mental Health Services Integration Survey

School Mental Health Services Integration Survey
University of South Florida · College of Behavioral and Community Sciences
O. Tom Massey, Ph.D. · Donna L. Burton, Ed.M.

This survey asks you to consider various aspects of mental health services delivery in school settings.

Consent

Q1 I have read and understood the above consent form and desire of my own free will to participate in this study
○ Yes   ○ No

Q2 Please give the name of your base school for which you are providing information.

Q3 Provide the area number for your base school.

Q4 Select one of the following school types.
○ Elementary   ○ Middle   ○ High   ○ Other

Q5 What is your current job title for the above named school?
○ Principal or Assistant Principal   ○ School Psychologist
○ Teacher   ○ School Resource Officer
○ Guidance Counselor   ○ School Health Staff (RN / ARNP)
○ Social Worker   ○ Other _____

Vision of Mental Health Services   The next questions ask about the organization and delivery of mental health services. For each question choose the answer that best reflects your vision for services.

Q6 Mental health assessment and counseling services emphasize individual, group or family interventions to students with mental, emotional or behavioral disorders or concerns. These services are best provided:
○ through referral to outside agencies that have expertise in these areas.
○ at the school by professionals from community-based organizations who come onto school campus to provide services.
○ by school-based professionals whose job-related tasks are integrated into the student's regular school day.

Q7 Mental health prevention and early intervention services (i.e. Assertiveness Training, Problem Solving Skills) emphasize education, awareness and resistance skills to a broad range of students. These services are best provided:
○ through referral to outside agencies that have expertise in these areas.
○ at the school by professionals from community-based organizations who come onto school campus to provide services.
○ by school-based professionals whose job-related tasks are integrated into the student's regular school day.

Q8 Mental health services should be offered in the classroom setting when necessary to meet student needs.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Q9 Mental health services should be integrated into the school's overall health plan for students.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Q10 Mental health problems are a private, individualized issue about which parents should make decisions without the involvement of the school.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Q11 Mental health problems that result in infractions at school should be referred to juvenile authorities and not managed by school staff.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Roles and Responsibilities - Organizational Structure   Please indicate the degree to which each of the statement matches your current responsibilities.

Q12 Searching for effective interventions that are appropriate to student mental health needs.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Q13 Developing specific interventions that are effective and appropriate to student mental health needs.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Q14 Assisting in the development of a system by which students in need of mental health services can be referred to the appropriate interventions.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Q15 Referring students to mental health services.
○ Strongly Disagree ○ Disagree ○ Neither Agree nor Disagree ○ Agree
○ Strongly Agree

Q16 Providing mental health services to students.
○ Strongly Disagree ○ Disagree ○ Neither Agree nor Disagree ○ Agree
○ Strongly Agree

Q17 Providing prevention programs such as health promotion programs, violence or bullying prevention programs, or self-esteem building programs to students.
○ Strongly Disagree ○ Disagree ○ Neither Agree nor Disagree ○ Agree
○ Strongly Agree

Q18 Ensuring mental health needs of students are met.
○ Strongly Disagree ○ Disagree ○ Neither Agree nor Disagree ○ Agree
○ Strongly Agree

Q19 Assisting in the delivery of mental health services by helping with scheduling and facilitating student access to services.
○ Strongly Disagree ○ Disagree ○ Neither Agree nor Disagree ○ Agree
○ Strongly Agree

Q20 Linking mental health services to an overall health plan for students.
○ Strongly Disagree ○ Disagree ○ Neither Agree nor Disagree ○ Agree
○ Strongly Agree

Q21 Making students available to receive mental health interventions by adjusting their schedules.
○ Strongly Disagree ○ Disagree ○ Neither Agree nor Disagree ○ Agree
○ Strongly Agree

Q22 Serving as a member of a team, working to solve student mental health service needs.
○ Strongly Disagree ○ Disagree ○ Neither Agree nor Disagree ○ Agree
○ Strongly Agree

Q23 Using data to drive decision-making around mental health needs.
○ Strongly Disagree ○ Disagree ○ Neither Agree nor Disagree ○ Agree
○ Strongly Agree

Q24 I have confidence in my ability to carry out my current responsibilities related to the provision of mental health services to students.
○ Strongly Disagree ○ Disagree ○ Neither Agree nor Disagree ○ Agree
○ Strongly Agree

Professional Perspectives   Please indicate your agreement / disagreement with the following statements.

Q25 I am willing to look on-line for interventions that have been shown to be effective in addressing mental health problems for students.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Q26 I am open to acting as a member of the Problem Solving Leadership Team (PSLT) in the delivery of services and programs to address mental health problems in schools.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Q27 I am willing to support school-based staff who provide mental health interventions.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Q28 I am willing to refer students to outside providers of services to address mental health needs.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Q29 I would like to be involved in the direct provision of mental health services to students at school.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Q30 I would like to be involved with outside providers to help integrate mental health services in the school setting.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Q31 I am open to meeting with parents to assist in the referral of a child for outside mental health services.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Q32 I am open to meeting with parents to assist in the integration of mental health services with the student's overall school program.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Q33 I am willing to work to integrate mental health services into an overall health plan for students.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Vision of Substance Abuse Services   The next questions ask about the organization and delivery of substance abuse services. For each question choose the answer that best reflects your vision for services.

Q34 Drug abuse treatment (i.e. assessment and counseling services) emphasizes individual, group or family interventions for students with substance-related problems. These services are best provided:
○ through referral to outside agencies that have expertise in these areas.
○ at the school by professionals from community-based organizations who come onto school campus to provide services.
○ by school-based professionals whose job-related tasks are integrated into the student's regular school day.

Q35 Drug abuse prevention and early intervention services (i.e. Too Good for Drugs) emphasize education, awareness and resistance skills to a broad range of students. These services are best provided:
○ through referral to outside agencies that have expertise in these areas.
○ at the school by professionals from community-based organizations who come onto school campus to provide services.
○ by school-based professionals whose job-related tasks are integrated into the student's regular school day.

Q36 Drug abuse prevention programs are a necessary component of a school-wide intervention effort for all students.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Q37 Drug abuse problems are a private, individualized issue about which parents should make decisions without the involvement of the school.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Q38 Drug abuse services should be intergated into the school's overall health plan for students.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Q39 Drug abuse treatment services should be offered in an alternative school setting.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Q40 Drug abuse problems that result in infractions at school should be referred to juvenile authorities and not be managed by school staff.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Barriers and Facilitators   For the following items, you are asked to indicate the degree to which you agree or disagree that the statement matches your school.

Q41 School administrators encourage school personnel to work together to address student mental health needs.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Q42 Mental health services are important in the school setting independent of academic success.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Q43 I can approach other professionals (teachers, social workers, school psychologists) when I have questions about student mental health needs.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Q44 There are clear, designated procedures or a clear authority for referral when students have mental health needs.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Q45 There are clear, designated procedures or a clear authority for referral when students have drug abuse services needs.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Q46 Student service professionals share responsibilities when addressing student mental health needs.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Q47 Teachers share in the responsibility for the delivery of mental health services.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Q48 The school district supports or encourages efforts to provide mental health services.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Q49 When it has been necessary, I have been able to effectively communicate with mental health agencies in the community.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Q50 Structural supports exist (i.e. resources, funding, organization) to support mental health services for students at this school.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Q51 The school offers flexibility in my schedule or assignment to adequately assist students who have mental health needs.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Q52 Administrators are willing to help if I have concerns about a student's mental health needs.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Q53 My school has made a commitment to support mental health services.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Q54 My school has made a commitment to support drug abuse services services.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Q55 I see mental health services as important to academic success.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree
Q56 Administrators see mental health services as important for academic success.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Q57 There is effective communication among professionals within my school regarding mental health services.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Q58 If a student exhibits mental health crisis symptoms, a School Resource Officer (SRO) is consulted.
◯ Strongly Disagree   ◯ Disagree   ◯ Neither Agree nor Disagree   ◯ Agree
◯ Strongly Agree

Q59 I receive the training I need to address student mental health needs.
◯ Strongly Disagree   ◯ Disagree   ◯ Neither Agree nor Disagree   ◯ Agree
◯ Strongly Agree

Q60 I receive the training I need to address student substance abuse issues.
◯ Strongly Disagree   ◯ Disagree   ◯ Neither Agree nor Disagree   ◯ Agree
◯ Strongly Agree

Q61 The schools responsibility for mental health services should only include addressing needs for students with a diagnosed mental health condition.
◯ Strongly Disagree   ◯ Disagree   ◯ Neither Agree nor Disagree   ◯ Agree
◯ Strongly Agree

Q62 Mental health services are available for all students, even if they do not have a diagnosis.
◯ Strongly Disagree   ◯ Disagree   ◯ Neither Agree nor Disagree   ◯ Agree
◯ Strongly Agree

Q63 School leadership groups, such as The Problem Solving Leadership Team (PSLT) and the Professional Learning Community (PLC) are effective in resolving mental health problems of students.
◯ Strongly Disagree   ◯ Disagree   ◯ Neither Agree nor Disagree   ◯ Agree
◯ Strongly Agree

Q64 Who do you believe should participate on a team to coordinate mental health service needs of students? (Check all that apply.)
◯ Principal or Assistant Principal   ◯ School Psychologist
◯ Teacher   ◯ School Resource Officer
◯ Guidance Counselor   ◯ School Health Staff (RN / ARNP)
◯ Social Worker   ◯ Other _____

Q65 Who should take the primary lead in the coordination of mental health services delivery for students in the school setting? (Select the best answer.)
◯ Principal or Assistant Principal   ◯ School Psychologist
◯ Teacher   ◯ School Resource Officer
◯ Guidance Counselor   ◯ School Health Staff (RN / ARNP)
◯ Social Worker   ◯ Other _____

2008 MHI Follow-up   Please answer the following questions which have to do with the first mental health services integration grant project, that ended in 2009. if you were not

yet employed during this first grant project, please answer N/A to questions 1 and the survey will skip you to question 3 in this section.

Q66 Since the first mental health services integration grant project, I am more aware of the mental health needs of students.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree
○ N/A

If N/A Is Selected, Then Skip To I know how to access the tools available…

Q67 Since the first mental health services integration grant project, I am more familiar with the resources at my school.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree
Q68 I know how to access the tools available to educators (Mental Health Integration website and the Mental Health Toolbox).
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Q69 I am familiar with the Protocol for Facilitating Return to School from the Crisis Center.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Q70 I am familiar with the Protocol for Educators to Address Health Concerns.
○ Strongly Disagree   ○ Disagree   ○ Neither Agree nor Disagree   ○ Agree
○ Strongly Agree

Evidence-Based Practice Attitude Scale   The following questions ask about your feelings about using new types of services and interventions for mental health and drug abuse problems among students in school settings.   In these questions manualized services, treatment, or intervention refers to any intervention that has specific guidelines and/or components that are outlined in a manual and/or that are to be followed in a structured or predetermined way.   Indicate the extent to which you agree with each item using the scale shown.

Q71 I like to use new types of services / interventions to help my students.
○ Not at All
○ To a Slight Extent
○ To a Moderate Extent
○ To a Great Extent
○ To a Very Great Extent

Q72 I am willing to try new types of services/interventions even if I have to follow a treatment manual.
○ Not at All
○ To a Slight Extent
○ To a Moderate Extent
○ To a Great Extent
○ To a Very Great Extent

Q73 I know better than academic researchers how to care for my students.
○ Not at All
○ To a Slight Extent
○ To a Moderate Extent
○ To a Great Extent
○ To a Very Great Extent

Q74 I am willing to use new and different types of services/interventions developed by researchers.
○ Not at All
○ To a Slight Extent
○ To a Moderate Extent
○ To a Great Extent
○ To a Very Great Extent

Q75 Research based services/interventions are useful.
○ Not at All
○ To a Slight Extent
○ To a Moderate Extent
○ To a Great Extent
○ To a Very Great Extent

Q76 Professional experience is more important than using manualized services/interventions.
○ Not at All
○To a Slight Extent
○ To a Moderate Extent
○ To a Great Extent
○ To a Very Great Extent

Q77 I would use manualized services / interventions.
○ Not at All
○To a Slight Extent
○ To a Moderate Extent
○ To a Great Extent
○ To a Very Great Extent

Q78 I would try a new service/intervention even if it were very different from what I am used to doing.
○ Not at All
○To a Slight Extent
○ To a Moderate Extent
○ To a Great Extent
○ To a Very Great Extent

For questions 9–15: If you received training in a services or intervention that was new to you, how likely would you be to adopt it if:

Q79 it was intuitively appealing to you?
○ Not at All
○To a Slight Extent
○ To a Moderate Extent
○ To a Great Extent
○ To a Very Great Extent

Q80 it "made sense" to you?
○ Not at All
○To a Slight Extent
○ To a Moderate Extent
○ To a Great Extent
○ To a Very Great Extent

Q81 it was required by your supervisor?
○ Not at All
○To a Slight Extent
○ To a Moderate Extent
○ To a Great Extent
○ To a Very Great Extent

Q82 it was required by your school?
○ Not at All
○To a Slight Extent
○ To a Moderate Extent
○ To a Great Extent
○ To a Very Great Extent

Q83 it was required by your state?
○ Not at All
○To a Slight Extent
○ To a Moderate Extent
○ To a Great Extent
○ To a Very Great Extent

Q84 it was being used by colleagues who were happy with it?
○ Not at All
○To a Slight Extent
○ To a Moderate Extent
○ To a Great Extent
○ To a Very Great Extent

Q85 you felt you had enough training to use it correctly?
○ Not at All
○To a Slight Extent
○ To a Moderate Extent
○ To a Great Extent
○ To a Very Great Extent

Q86 My school has used manualized services/interventions to address student mental health issues in the past.
○ Disagree   ○ Uncertain   ○ Agree

This ends the Mental Health Services Integration Survey. Thank You for your assistance.

Q87 If you have any closing comments you may record them below:

Appendix B: Evidence-based Practice Attitude Scale Items and Scoring

Instructions

**EVIDENCE-BASED PRACTICE ATTITUDE SCALE ITEMS AND
SCORING INSTRUCTIONS**

Instructions The following questions ask about your feelings about using new types of therapy, interventions, or treatments. Manualized therapy, treatment, or intervention refers to any intervention that has specific guidelines and/or components that are outlined in a manual and/or that are to be followed in a structured or predetermined way. Indicate the extent to which you agree with each item using the following scale.

0	1	2	3	4
Not at All	To a Slight Extent	To a Moderate Extent	To a Great Extent	To a Very Great Extent

Item	Subscale	Question
1.	3	I like to use new types of therapy/interventions to help my clients.
2.	3	I am willing to try new types of therapy/interventions even if I have to follow a treatment manual.
3.	4	I know better than academic researchers how to care for my clients.
4.	3	I am willing to use new and different types of therapy/interventions developed by researchers.
5.	4	Research based treatments/interventions are not clinically useful.
6.	4	Clinical experience is more important than using manualized therapy/interventions.
7.	4	I would not use manualized therapy/interventions.
8.	3	I would try a new therapy/intervention even if it were very different from what I am used to doing.

For questions 9–15: If you received training in a therapy or intervention that was new to you, how likely would you be to adopt it if:

9.	2	it was intuitively appealing?
10.	2	it "made sense" to you?
11.	1	it was required by your supervisor?
12.	1	it was required by your agency?
13.	1	it was required by your state?
14.	2	it was being used by colleagues who were happy with it?
15.	2	you felt you had enough training to use it correctly?

Note: Subscale 1 = Requirements; 2 = Appeal; 3 = Openness; 4 = Divergence.

Scoring the Subscales The score for each subscale is created by computing a total or mean score for the items that load on a given subscale. For example, Items 11, 12, and 13 constitute subscale 1.

Computing the Total Scale Score For the total score, all items from the Divergence subscale (Sub-scale 4) must be reverse scored before being used in computing the EBPAS total score.

Aarons, G. A. (2004). Mental health provider attitudes toward adoption of evidence-based practice: The evidence-based practice attitude scale. *Mental Health Services Research*, *6*(2), 61-74.

Appendix C: Evidence-based Practice Attitude Scale (modified) Items and Scoring Instructions

EVIDENCE-BASED PRACTICE ATTITUDE SCALE *(MODIFIED)* ITEMS AND SCORING INSTRUCTIONS

Instructions The following questions ask about your feelings about using new types of services and interventions for mental health and drug abuse counseling and prevention. Manualized services, treatment, or intervention refers to any intervention that has specific guidelines and/or components that are outlined in a manual and/or that are to be followed in a structured or predetermined way. Indicate the extent to which you agree with each item using the following scale.

0	**1**	**2**	**3**	**4**
Not at All	To a Slight Extent	To a Moderate Extent	To a Great Extent	To a Very Great Extent

Item	**Subscale**	**Question**
1.	3	I like to use new types of services/interventions to help my students.
2.	3	I am willing to try new types of services/interventions even if I have to follow a treatment manual.
3.	4	I know better than academic researchers how to care for my students.
4.	3	I am willing to use new and different types of services/interventions developed by researchers.
5.	4	Research based services/interventions are not useful.
6.	4	Professional experience is more important than using manualized services/interventions.
7.	4	I would not use manualized services/interventions.
8.	3	I would try a new service/intervention even if it were very different from what I am used to doing.

For questions 9–15: If you received training in a services or intervention that was new to you, how likely would you be to adopt it if:

9.	2	it was intuitively appealing?
10.	2	it "made sense" to you?
11.	1	it was required by your supervisor?
12.	1	it was required by your school?
13.	1	it was required by your state?
14.	2	it was being used by colleagues who were happy with it?
15.	2	you felt you had enough training to use it correctly?

Note: Subscale 1 = Requirements; 2 = Appeal; 3 = Openness; 4 = Divergence.

Scoring the Subscales The score for each subscale is created by computing a total or mean score for the items that load on a given subscale. For example, Items 11, 12, and 13 constitute subscale 1.

Computing the Total Scale Score For the total score, all items from the Divergence subscale (Sub-scale 4) must be reverse scored before being used in computing the EBPAS total score.

Appendix D: Factor Loading Tables

Exploratory factor analysis loadings for <u>Role Identification</u> domain

Item (statement matches current responsibilities)	Factor	
	1 **(Provider)**	**2** **(Facilitator)**
Searching for effective interventions that are appropriate to student mental health needs.	**.932**	-.138
Developing specific interventions that are effective and appropriate to student mental health needs.	**.889**	-.038
Assisting in the development of a system by which students in need of mental health services can be referred to the appropriate interventions.	**.498**	.235
Referring students to mental health services.	**.464**	.043
Providing mental health services to students.	**.616**	.056
Providing prevention programs such as health promotion programs, violence or bullying prevention programs, or self-esteem building programs to students.	.157	**.408**
Ensuring mental health needs of students are met.	.187	**.600**
Assisting in the delivery of mental health services by helping with scheduling and facilitating student access to services.	.079	**.699**
Linking mental health services to an overall health plan for students.	.067	**.763**
Making students available to receive mental health interventions by adjusting their schedules.	-.256	**.796**
Serving as a member of a team, working to solve student mental health service needs.	.289	**.447**
Using data to drive decision-making around mental health needs.	.159	**.603**

Extraction Method: Principal Axis Factoring. Rotation Method: Promax with Kaiser Normalization.[a]

a. Rotation converged in 3 iterations.

Exploratory factor analysis loadings for <u>Willingness</u> domain

Item	Factor 1 (Willingness)
I am willing to look on-line for interventions that have been shown to be effective in addressing mental health problems for students.	.734
I am open to acting as a member of the Problem Solving Leadership Team (PSLT) in the delivery of services and programs to address mental health problems in schools.	.798
I am willing to support school-based staff who provide mental health interventions.	.594
I am willing to refer students to outside providers of services to address mental health needs.	.673
I would like to be involved in the direct provision of mental health services to students at school.	.680
I would like to be involved with outside providers to help integrate mental health services in the school setting.	.770
I am open to meeting with parents to assist in the referral of a child for outside mental health services.	.802
I am open to meeting with parents to assist in the integration of mental health services with the student's overall school program.	.815
I am willing to work to integrate mental health services into an overall health plan for students.	.786

Extraction Method: Principal Axis Factoring. a. 1 factors extracted; 4 iterations required.

Exploratory factor analysis loadings for <u>Implementation Facilitators</u> domain

	Factor		
Item (the statement matches your school)	**1 (Overall Administrative Structure)**	**2 (Individual Support)**	**3 (Shared Professional Responsibility)**
School administrators encourage school personnel to work together to address student mental health needs.	**.697**	-.152	.173
Mental health services are important in the school setting independent of academic success.	**.443**	-.075	.097
I can approach other professionals (teachers, social workers, school psychologists) when I have questions about student mental health needs.	.284	-.022	**.403**
There are clear, designated procedures or a clear authority for referral when students have mental health needs.	**.574**	.278	-.130
There are clear, designated procedures or a clear authority for referral when students have drug abuse services needs.	**.728**	.203	-.349
Student service professionals share responsibilities when addressing student mental health needs.	.259	.094	**.375**
Teachers share in the responsibility for the delivery of mental health services.	**.494**	.072	-.061
The school district supports or encourages efforts to provide mental health services.	**.450**	.166	.109
When it has been necessary, I have been able to effectively communicate with mental health agencies in the community.	.014	**.478**	.235
Structural supports exist (i.e. resources, funding, organization) to support mental health services for students at this school.	**.472**	.250	-.116
The school offers flexibility in my schedule or assignment to adequately assist students who have mental health needs.	.183	**.331**	.314
Administrators are willing to help if I have concerns about a student's mental health needs.	**.638**	-.071	.273
My school has made a commitment to	**.732**	-.038	.169

support mental health services.			
My school has made a commitment to support drug abuse services services.	**.683**	.029	-.171
I see mental health services as important to academic success.	.014	.034	**.662**
Administrators see mental health services as important for academic success.	**.675**	-.176	.281
There is effective communication among professionals within my school regarding mental health services	**.587**	.126	.140
If a student exhibits mental health crisis symptoms, a School Resource Officer (SRO) is consulted.	.153	.201	-.020
I receive the training I need to address student mental health needs.	-.229	**.866**	.268
I receive the training I need to address student substance abuse issues.	.130	**.631**	-.158
The school's responsibility for mental health services should only include addressing needs for students with a diagnosed mental health condition.	-.187	.089	**.452**
Mental health services are available for all students, even if they do not have a diagnosis.	.118	**.348**	.234
School leadership groups, such as The Problem Solving Leadership Team (PSLT) and the Professional Learning Community are effective in resolving mental health problems of students.	**.537**	.209	-.138

Extraction Method: Principal Axis Factoring. Rotation Method: Promax with Kaiser Normalization.[a]
a. Rotation converged in 14 iterations.

Appendix E: IRB Letter

USF

UNIVERSITY OF
SOUTH FLORIDA

DIVISION OF RESEARCH INTEGRITY AND COMPLIANCE
Institutional Review Boards, FWA No. 00001669
12901 Bruce B. Downs Blvd. MDC035 • Tampa, FL 33612-4799
(813) 974-5638 • FAX (813) 974-5618

April 7, 2011

Oliver Massey
Division of Policy, Services Research and Evaluation
13301 Bruce Downs Blvd
MHC 2-331

RE: **Not Human Research Activities Determination**

Activity Title: Mental Health Integration Evaluation

Dear Oliver Massey,

I have reviewed the information you provided regarding the above referenced project and have determined the activities do not meet the USF definition of human subjects research activities; therefore, IRB approval is not required. If, in the future, you change this activity such that it becomes human subjects research activities, prior IRB approval is required. If you wish to obtain a determination about whether the activity, with the proposed changes, will be human research activities, please contact the IRB Office for further guidance.

All research activities, regardless of the level of IRB oversight, must be conducted in a manner that is consistent with the ethical principles of your profession and the ethical guidelines for the protection of human subjects. As principal investigator, it is your responsibility to ensure subjects' rights and welfare are protected during the execution of this project

Also, please note that there may be requirements under the HIPAA Privacy Rule that apply to the information/data you will use in your activities. For further information about any existing HIPAA requirements for this project, please contact Vinita Witanachchi, J.D., HIPAA Program Coordinator, at 813-974-5478.

We appreciate your dedication to the ethical conduct of human subject research at the University of South Florida and your continued commitment to human research protections. If you have any questions regarding this matter, please call 813-974-5638.

Sincerely,

John A. Schinka, Ph.D.

John A. Schinka, Ph.D., Chairperson
USF Institutional Review Board

Cc: Steven Kim, USF IRB Staff

Appendix F: Permissions

and Business Media control the copyright, permission is granted, free of charge, for the use indicated in your enquiry.

Licenses are for one-time use only with a maximum distribution equal to the number that you identified in the licensing process.

This License includes use in an electronic form, provided its password protected or on the university's intranet or repository, including UMI (according to the definition at the Sherpa website: http://www.sherpa.ac.uk/romeo/). For any other electronic use, please contact Springer at (permissions.dordrecht@springer.com or permissions.heidelberg@springer.com).

The material can only be used for the purpose of defending your thesis, and with a maximum of 100 extra copies in paper.

Although Springer holds copyright to the material and is entitled to negotiate on rights, this license is only valid, subject to a courtesy information to the author (address is given with the article/chapter) and provided it concerns original material which does not carry references to other sources (if material in question appears with credit to another source, authorization from that source is required as well).

Permission free of charge on this occasion does not prejudice any rights we might have to charge for reproduction of our copyrighted material in the future.

Altering/Modifying Material: Not Permitted
You may not alter or modify the material in any manner. Abbreviations, additions, deletions and/or any other alterations shall be made only with prior written authorization of the author (s) and/or Springer Science + Business Media. (Please contact Springer at (permissions.dordrecht@springer.com or permissions.heidelberg@springer.com)

Reservation of Rights
Springer Science + Business Media reserves all rights not specifically granted in the combination of (i) the license details provided by you and accepted in the course of this licensing transaction, (ii) these terms and conditions and (iii) CCC's Billing and Payment terms and conditions.

Copyright Notice:Disclaimer
You must include the following copyright and permission notice in connection with any reproduction of the licensed material: "Springer and the original publisher /journal title, volume, year of publication, page, chapter/article title, name(s) of author(s), figure number (s), original copyright notice) is given to the publication in which the material was originally published, by adding; with kind permission from Springer Science and Business Media"

Warranties: None

Example 1: Springer Science + Business Media makes no representations or warranties with respect to the licensed material.

Example 2: Springer Science + Business Media makes no representations or warranties with respect to the licensed material and adopts on its own behalf the limitations and disclaimers

established by CCC on its behalf in its Billing and Payment terms and conditions for this licensing transaction.

Indemnity
You hereby indemnify and agree to hold harmless Springer Science + Business Media and CCC, and their respective officers, directors, employees and agents, from and against any and all claims arising out of your use of the licensed material other than as specifically authorized pursuant to this license.

No Transfer of License
This license is personal to you and may not be sublicensed, assigned, or transferred by you to any other person without Springer Science + Business Media's written permission.

No Amendment Except in Writing
This license may not be amended except in a writing signed by both parties (or, in the case of Springer Science + Business Media, by CCC on Springer Science + Business Media's behalf).

Objection to Contrary Terms
Springer Science + Business Media hereby objects to any terms contained in any purchase order, acknowledgment, check endorsement or other writing prepared by you, which terms are inconsistent with these terms and conditions or CCC's Billing and Payment terms and conditions. These terms and conditions, together with CCC's Billing and Payment terms and conditions (which are incorporated herein), comprise the entire agreement between you and Springer Science + Business Media (and CCC) concerning this licensing transaction. In the event of any conflict between your obligations established by these terms and conditions and those established by CCC's Billing and Payment terms and conditions, these terms and conditions shall control.

Jurisdiction
All disputes that may arise in connection with this present License, or the breach thereof, shall be settled exclusively by arbitration, to be held in The Netherlands, in accordance with Dutch law, and to be conducted under the Rules of the 'Netherlands Arbitrage Instituut' (Netherlands Institute of Arbitration).*OR:*

All disputes that may arise in connection with this present License, or the breach thereof, shall be settled exclusively by arbitration, to be held in the Federal Republic of Germany, in accordance with German law.

Other terms and conditions:

v1.3

If you would like to pay for this license now, please remit this license along with your payment made payable to "COPYRIGHT CLEARANCE CENTER" otherwise you will be invoiced within 48 hours of the license date. Payment should be in the form of a check or money order referencing your account number and this invoice number RLNK501063638.
Once you receive your invoice for this order, you may pay your invoice by credit card. Please follow instructions provided at that time.

Make Payment To: