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URBAN SCHOOL-BASED BEHAVIORAL HEALTH PROVIDERS' ATTITUDES TOWARDS EVIDENCE BASED PRACTICES

A Dissertation Presented

by

ERIK D. MAKI

Submitted to the Office of Graduate Studies,
University of Massachusetts Boston,
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

August 2016

Counseling and School Psychology Program

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URBAN SCHOOL-BASED BEHAVIORAL HEALTH PROVIDERS' ATTITUDES

TOWARDS EVIDENCE BASED PRACTICES

A Dissertation Presented

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ERIK D. MAKI

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ABSTRACT

URBAN SCHOOL-BASED BEHAVIORAL HEALTH PROVIDERS' ATTITUDES TOWARDS EVIDENCE BASED PRACTICES

August 2016

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Evidence Based Practices (EBPs) in schools show promise in meeting the behavioral health needs of urban students, however there are multiple barriers to implementation. Providers' attitudes towards EBPs may be one of these barriers. Through a cross sectional survey design, this dissertation answers four major research questions: 1) Is the EBPAS-50 an appropriate tool to use with school based behavioral health providers, 2) Do attitudes vary depending on level of experience (student vs. professional), 3) Do attitudes vary depending on a practitioners' hire status (school-hired vs. non-school hired), and 4) Do EBPAS-50 scores predict implementation of EBPs? Participants were 160 school behavioral health providers who provided at least one hour per week of direct or indirect services within the Boston Public Schools. Results indicated that the factor structures for the EBPAS-50

and EBPAS- 15 did not hold with this population, however the EBPAS-15 was used for further analysis as it has been validated many times since its introduction. Using the EBPAS-15: 1) graduate students reported more positive attitudes than professionals, 2) school-hired providers reported more positive attitudes than non-school hired providers, and 3) there was no correlation between attitudes and use of EBPs. Though differences may have been statistically significant, it is questionable as to whether these differences are practically significant as the average, rounded, response from providers indicated that they agreed with EBPs to "a great extent". This suggests need for ongoing research to identify: 1) aspects of evidence based practices that are important to school-based providers, and 2) a revised tool to measure the attitudes of school-based providers towards EBPs.

DEDICATIONS

To my family (especially the Makis, the Webbers, the Piettes, and the Pelletiers) who encouraged me in my educational pursuits…

To my parents (Faye Williamson, Bruce Maki, and Ann Piette) who provided me with all the resources you could and who taught me the importance of caring for others…

To my loving partner, Colin Lynch, and my dear friends who supported and tolerated me through the stresses of graduate school…

To my current and former clients who inspire me to be the best clinician I can be….

To my current and former supervisors, especially Dana Zais and Nanette Campo, who believed in me and challenged me to consider the system surrounding the child…

To my fellow "Uppies" from Cast A 2006 who taught me that there are many ways to communicate and to show compassion…

To my academic advisor, Melissa Pearrow, who saw my potential and knew exactly how to push me to grow…

To Victoria Sheppard, Samantha Broadhead, Lauren Brodsy, and Marlana Mueller for their research team awesomeness ("Put a bird on it")…

To my CSP classmates (especially Sheila Desai, Ryan Martin, Ali Plocha, Elena Kosterina, Emily Wheeler, Melanie Fuentes, Selda Celen-Demirtas, & Tinatin Surguladze) whose "cohort love" kept me going through all the long classes and late nights…..

…I can never thank you enough.

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CHAPTER 1

INTRODUCTION

Area of Interest

About 64% of adults report having experienced at least one adverse event in childhood, such as abuse, neglect, or household dysfunction (CDC, 2014). These adverse events increase one's risk of experiencing a mental health issue such as a lifetime depressive disorder (Chapman, Whitfield, Felitti, Dube, Edwards, & Anda, 2004). Nearly one out of five students in the United States struggle with an emotional disorder during his or her education, with nearly one out of ten experiencing such severity that they require some form of intervention (Duchnowski, Kutash, & Friedman, 2002; Merikangas et. al, 2010). For those with an identified disorder, less than half of those youth receive mental health treatment during the course of a year (APA Task Force, 2008; Burns et. al., 1995; CDC, 2015; Kataoka, Zhang, & Wells, 2002). There are even fewer services available for youth who suffer from substance abuse, who are involved with juvenile justice and welfare systems, who come from low-income families, and/or those who are an ethnic minority (especially Latino children) (APA Task Force, 2008; Health Care Financing & Organization (HCFO), 2004; Masi & Cooper, 2006; National Center for Children in Poverty, 2006).

Children who live in low-income urban areas experience stresses that increase their need for mental health intervention. They frequently face challenges such as high

crime, unemployment of a parent, and poverty (Anakwenze & Zuberi, 2013). These youth are at increased risk for poor emotional and social competence in addition to poor academic achievement (Elias & Haynes, 2008). Urban youth engage in more frequent and more intensive challenging behaviors in school (Lassen, Steele, & Sailor, 2006; Sugai & Horner, 1999; Warren et al. 2003) and need more intensive support than their rural or suburban counterparts (Turnbull, Wilcox, & Stowe, 2002)

These realities make the provision of behavioral health services to urban youth a social justice issue. Schools are an optimal setting where such services can and should be provided so that these discrepancies can be reduced. Schools are often identified as ideal environments to provide mental health services to children as they are often better equipped to manage barriers to treatment including financial limitations (such as lack of insurance), cultural and linguistic barriers, and fear of deportation (Garrison, Roy, & Azar, 1999; Langley, Nadeem, Kadoaka, Stein, & Jaycox, 2010).

Many of these barriers are overcome by the mere fact that education is mandated in the United States. While in attendance at school, children and adolescents have the opportunity to receive preventative, assessment, and intervention services without needing to leave the building. Social-emotional interventions provided within the school context are exceptionally important for urban youth with regards to improving their academic achievement (Walter et al., 2011). However, school resources for behavioral health services are limited, necessitating that services provided be targeted, short term, and effective.

Evidence based practices (EBPs) show promise in meeting these needs. The American Psychological Association defines EBPs in Psychology as “the integration of

the best available research with clinical expertise in the context of patient characteristics, culture, and preferences." (APA, 2006, p. 273). The APA Task Force on Evidence Based Practice with Children and Adolescents (2008) adds that there are three primary elements to EBP which include:

> (a) assessment that guides diagnosis, intervention planning, and outcome evaluation; (b) intervention that includes, but is not limited to, those treatment programs for which randomized controlled trials have shown empirical support for the target populations and ecologies; and (c) ongoing monitoring, including client or participant feedback, conducted in a scientifically minded manner and informed by clinical expertise (e.g. judgment, decision making, interpersonal expertise). (p. 9)

Despite the success of EBPs, implementation rates at schools can be incredibly low (Atkins, Frazier, Adil, & Talbott, 2003; Codding, Feinberg, Dunn & Pace, 2005; Ennett et al., 2003; Gottfredson & Gottfredson, 2002; Kelly et al., 2015; Wang, Berglund, & Kessler, 2000) especially as schools tend to utilize marketed products that have been in existence for over a decade (Hallfors & Godette, 2002). Furthermore, fidelity to the design of the intervention can be rare (Gottfredson & Gottfredson, 2002). Low levels of implementation may be a result of personal and systematic issues. Personal barriers may include lack of training in EBPs, lack of recency of training, or lack of comfort with intervention format (Biedas & Kendall, 2010; Forman, Fagley, Chu, & Walkup, 2012; Hicks et al, 2014; . Systematic issues may include lack of integration with school routine, lack of organizational and technical support, and lack of resources such as time, people, and money (Aarons et. al, 2012b; Atkins et al., 2003; Durlak & Dupre, 2008; Ennett et

al., 2003; Fixsen, Naoom, Blasé, Friedman, & Wallace, 2005; Greenhalgh, Robert, Macfarlane, Bate & Kyriakidou, 2004; Rogers, 2003). This suggests that the interventions that students receive are not optimized in their content and their delivery, so the chance of impacting change in students is drastically reduced.

A notable volume of research recently has been dedicated to this issue of the dissemination and use of evidence based practices in the clinical world (e.g. Novins, Green, Legha, & Aarons, 2013; Rousseau & Gunia, 2016). There are multiple theories posed in the literature to explain the phenomenon of dissemination of innovation (for example Ajzen, 1991; Bandura, 1977, Rogers, 2003). The guiding theory for this paper will be Roger's innovation diffusion theory. This theory proposes that for any concept to be accepted and utilized by a population it needs to go through 5 stages. The first three stages, known as the "K-A-P" or "knowledge-attitudes-practice" have the strongest research support (Rogers, 2003). The knowledge stage is focused on how a population is exposed to an innovation and how it works. The attitudes stage is when the population makes their own decisions about how they feel about the innovation. The practice stage is when the population puts the innovation into action. From the framework of this model, it is important to understand how information about EBPs is being provided to school-based practitioners, how they individually and collectively assess that information, and whether (and how) they put that information into action. The focus of this study will be the attitudes and experiences of school-based practitioners toward EBPs.

The Evidence Based Practice Attitudes Scale (EBPAS, Aarons, 2004) is a tool developed by Aarons to assess practitioners' attitudes towards evidence-based practices. Research using this tool has provided some insight into the perceptions of mental health practitioners. Overall attitudes towards EBPs can be related to a practitioner's professional status, gender, professional discipline, and work culture (Aarons, 2004; Aarons & Sawatsky, 2006; Aarons et al., 2010, Aarons et al., 2012a, Aarons et al, 2012b). For instance, interns, women, social workers, and those who work in more proficient, engaged, and less stressful work climates tend to have more favorable attitudes towards EBPs than non-interns, men, and those trained in other disciplines (such as psychology). For a more nuanced investigation into provider's attitudes, one can look at the four factors that make up the EBPAS scale. The four factors are: *openness*, *divergence*, *appeal*, and *requirements*. *Openness* is about how willing a therapist is to use a new type of therapy, even if there is a manual involved, and if it is different than what the clinician is accustomed to doing. *Divergence* has to do with a therapist's perception of who knows what is best for his or her client, the therapist or the research base. *Appeal* is about how a therapist gravitates towards an intervention such as whether it is intuitive, makes sense, or the therapist has received positive feedback from peers about the intervention. *Requirements* refer to whether a therapist would be willing to implement a practice if required to do so by his or her superiors. These factors provide interesting insight into practitioners' perspectives on evidence-based practices. From prior research clinicians appear to vary in these factors by their demographics, such as gender and race (Aarons, 2004). Females tend to report higher levels of appeal and more willingness to implement EBPs if required of them (Aarons et al., 2010). Caucasian clinicians also

report more appeal towards, and less intention to diverge from, EBPs (Aarons et al., 2010). In terms of role and setting, clinicians who work in traditional outpatient settings tend to: be less open to using EBPs than those who work in wraparound programs, find less appeal towards EBPs than those who work in a case management role, and appear to have less willingness to implement EBPs if required to do so than those in Day Treatment programs (Aarons, 2004).

Administrative expectations appear to have an impact as well. Those clinicians who work in environments in which there is less bureaucracy and that have written policies around practice expectations tend to report more willingness to implement EBPs if it is required of them as well as more openness to trying a new intervention (Aarons, 2004).

Work climate variables also seem to play a part. Clinicians working within defensive work cultures (such as those characterized by approval seeking, conforming, and subservience) tend to report more intent to diverge from evidence based practices, yet are more willing to implement an intervention if required to do so (Aarons, 2004).

Educational attainment provides mixed results. Those with higher degrees find EBPs more appealing (Aarons, 2004), but are mixed in whether they are likely to follow through if told to do so (Aarons & Sawatzky, 2006; Aarons et al., 2010). Meanwhile, those with fewer years of professional experience are more open and less likely to diverge than more experienced professionals (Aarons et al., 2010). Following suit, interns also report less intent to diverge, more openness, and more appeal towards EBPs.

These data help us to understand the perspectives of community based providers and give us information with which we can tailor promotional, educational, and policy

efforts. Notably, this research does not sample from school-based practitioners. Largely, the samples for these studies came from community based mental health providers practicing outside of schools.

Few published works address the attitudes or beliefs of school based providers. The results of these studies indicate that school psychologists find EBIs as being consistent with their own approach and appropriate to the needs of culturally diverse students (Hicks et al, 2014) and that a school psychologist's beliefs about an intervention can impact his or her potential for implementing the intervention (Forman et al., 2012). To date, there is only one published article, by Stahmer and Aarons (2009) that directly assess the attitudes of school-based practitioners towards EBPs. The results of this study indicated that, in comparison to community based mental health clinicians, school based early interventionists reported more positive attitudes towards EBPs, less resistance to using EBPs (if required to do so), stronger attraction towards EBPs, and more openness to use EBPs. It is unclear, however, as to what variables (such as discipline, educational, context, or personal) contribute to these differences. However, Stahmer and Aarons (2009) posited that the differences may be a result of EI providers: being more open to learning new techniques as issues present themselves, being required to use EBPs by IDEA regulations (Tunbull, Wilcox, & Stowe, 2002), working with a narrower range of behavioral health issues, and/or working primarily with children with Autistic Spectrum Disorders.

Early interventionists are one important piece of the network of behavioral health services provided in a school setting. At present, there is insufficient data regarding the perspectives of school-based mental health providers (such as social workers, school

psychologists, and guidance counselors). School-based provider attitudes are an important piece to the Knowledge-Attitudes-Practice process in schools. Knowing school based providers' attitudes will provide two advantages. First of all, awareness of their attitudes will open the opportunity for discussion and research as to why clinicians hold their respective attitudes. Secondly, this information can be used to construct means to address provider's knowledge of EBPs, in the hopes of both increasing provider's knowledge and improving their attitudes. With improved knowledge and attitudes, this will hopefully lead to higher rates and higher quality of implementation, providing greater access to high quality care for students who are in desperate need of services (especially within urban settings). Therefore, the purpose of this study is to investigate the attitudes of school-based mental health providers towards EBPs.

Research Design

This study will examine the attitudes of school mental health providers towards EBPs by applying a preconstructed survey tool to an unexplored population, school-based mental health providers. School-based mental health providers will be defined as those who provide direct or indirect social, emotional, and/or behavioral interventions (including assessments), for at least one hour per week, within the context of a school. School-based mental health providers will include school psychologists, school social workers, guidance counselors, and community-based (agency-hired) providers who provide clinical services within the school setting. The population sampled will be school-based mental health providers who provide services in the public urban district of Boston, Massachusetts, so this will not be a nationally representative sample. However,

the sample may shed light on attitudes common to many urban school districts throughout the United States.

Research Questions and Hypotheses

Given the lack of prior research on the attitudes of school-based providers this study will be designed to explore the attitudes of school based behavioral health providers. This will be done using descriptive analysis. From the resulting data it will be determined whether comparisons are warranted in future studies. Based on the existing research the first question for this study is "Is the EBPAS-50 an appropriate instrument to use to identify the attitudes of school-based providers towards EBPs?" The second and third questions are based on prior research using the EBPAS. These questions are, "Do the EBPAS scores vary based on the level of experience of a provider (whether one is a student or a professional)" and, "Do the EBPAS scores vary based on how a provider is hired (whether one is hired by a school district or not)?" It is expected that school-hired professionals and students will report more positive attitudes towards EBPs than agency-hired providers and established professionals. The fourth question is designed to test the K-A-P theory, asking, "Are EBPAS scores correlated with implementation of EBPs?" Based on the K-A-P theory, it is expected that there will be a correlation between attitudes towards EBPs and use of EBPs.

CHAPTER 2

LITERATURE REVIEW

Since the mid 1990s, research on Evidence Based Practices (EBPs) has received increasing attention (e.g. Aarons, 2004; Addis, Wade, & Hatgis, 1999; Bauman et al., 2006, Rousseau, 2016). Though professional organizations such as the American Psychological Association strongly advocate for the adoption and use of EBPs, the acceptance and use of these practices has been slow and incomplete (Atkins et al., 2003; Ennett et al., 2003; Gottfredson & Gottfredson, 2002, Kelly et al., 2015). Amongst many factors, the attitudes of the clinicians themselves may act as facilitators or barriers to the use of EBPs (Forman et al., 2012; Hicks et al, 2014). Negative attitudes on the parts of clinicians towards EBPs reduce the likelihood that school aged children in need of services are to receive them (Bambara, Goh, Klein, & Caskie, 2012; Forman et al., 2012).

As a significant proportion of children receive their behavioral health services through schools (Rones & Hoagwood, 2000; Merikangas, et al, 2011), it is important to understand the attitudes of school based behavioral health providers. Their perspective has been lacking in prior research. This literature review will cover a) the rationale for schools being ideal environments for the provision of behavioral health services, b) the services currently being provided within school settings, c) clarification around the terminology of Evidence Based Practices (EBPs), d) the current status of EBP use in

schools, e) currently identified barriers to the use of EBPs, f) provider attitudes towards EBPs, g) means for measuring attitudes towards EBPs, h) limitations to existing studies, and i) a proposal of steps for future research.

Schools as Ideal Environments for Services

Schools are frequently considered the ideal environment for the provision of mental health services. Between 35- 82% of school-aged children who receive mental health services receive them through their schools (Burnett-Zeileger & Lyons, 2012; Rones & Hoagwood, 2000; Merikangas et al., 2011). As noted by Garrison et al (1999),

> Schools offer a single point of access to mental health services in a familiar, nonthreatening atmosphere relatively free of stigma…(and) are able to place greater emphasis on prevention and early intervention efforts to reduce the incidence of emotional and behavioral problems in the student population. The development of these services in schools also facilitates the work of mental health professionals by enabling them to observe students in multiple settings and over extended periods of time. There are also opportunities to enhance individual student adjustment, along with the overall school environment, through collaborative efforts among health, mental health, and education personnel (p. 207).

In turn, the provision of mental health services in schools helps to reduce the financial, cultural, and structural barriers that a youth and his or her family may encounter in trying to receive mental or medical services in the community. This is especially the case for minority and immigrant youth (Garrison et al., 1999; Langley et al., 2010). These barriers can include lack of information, lack of insurance,

inaccessibility of services and lack of transportation, lack of financial resources, non-citizen status, and cultural stigma around mental health (Garrison et al., 1999, Kazdin, Holland, & Crowley, 1997). Students are more likely to seek treatment, especially those receiving special education services, when schools offer mental health services (Slade, 2002). In contrast to clinical settings, schools appear better suited to address the cultural and socioeconomic barriers faced by minority students as there appear to be fewer disparities in mental health service use in schools (Cummings, Ponce, & Mays, 2010).

In addition, and most pertinent to the purpose of schools, students' behavioral health can have impact on their academic performance. For example, the expulsion rate for preschool children with social-emotional needs is three times higher than the broader K-12 population (Gilliam, 2005, SRI International, 2006). Furthermore, the suspension and expulsion rate for children overall with mental health issues is three times that of the general population (Blackorby & Cameto, 2004) Also, children with mental health issues can miss up to 22 academic days per year (Blackorby & Cameto, 2004) and about fourteen percent of this population receives mostly Ds and Fs for grades (Blackorby, Cohorst, Garza, & Gusman, 2003). Mental health disorders can contribute to over 10% of high school dropouts (Breslau, Lane, Sampson, & Kessler, 2008). With regards to African American youth, about 46% of those with disabilities may be suspended or expelled (SRI International, 2006). This makes mental health a notable threat to students' academic achievement and lifelong success.

Greater behavioral health can have positive impacts on academics. If students in urban schools have more health assets (including psychological assets), they are more likely to reach target goals for standardized reading, writing, and math tests (Ickovics et

al., 2014). Furthermore, in schools where school-wide (universal) social and emotional programming is provided, academic achievement can improve up to 11 percent and behavioral issues can decrease (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011; Lassen et al., 2006). These results suggest that investment into students' behavioral health can improve academic outcomes.

What are Evidence Based Practices?

EBPs reside at the core of the field of psychology, dating back to the conception of applied psychology by Lightner Whitmer in the late 1800s (APA, 2006; McReynolds, 1997). This focus on how the pure science of psychology goes hand in hand with the applied science of psychology is reflected in APA's endorsement of the development of scientist-practitioners in training programs of psychology (APA, 2006). To address the need for guidelines for EBPs, the APA developed a task force including the Board of Allied Professionals, the Board of Scientific Affairs, and the Committee for the Advancement of Professional practice. Together they developed a template for identifying EBPs, cautioning that data should be considered in conjunction with clinical expertise (APA, 1995). Most importantly, when evaluating whether an intervention is evidence based, the Template and the Criteria for Evaluating Treatment Guidelines (APA, 2006) indicated that interventions should be evaluated with regards to their *efficacy* and *clinical utility*. *Efficacy* refers to the strength of the causal relationship between the intervention and the disorder being treated. *Clinical utility* refers to how well the intervention fares with regards to cost, benefits, feasibility, and generalizability (APA, 2006).

Multiple terms have been used over the years to identify interventions with documented effectiveness (Thomas, Aimmer-Gembeck, & Chaffin, 2013). These terms include: empirically supported therapies or ESTs (Chambless & Hollon, 1998), evidence based interventions or EBIs (Hoagwood & Olin, 2002), and evidence based treatments or EBTs (Chaffin & Friedrich, 2004). EBTs have been defined as treatments supported by published random control trial research with shown efficacy and/or effectiveness (Thomas et al., 2013). Similarly, Chambless and Hollon (1998) defined ESTs as "clearly specified psychological treatments shown to be efficacious in controlled research with a delineated population. (p. 7)" Forman et al. (2009) defined EBIs as clearly specified psychological treatments with empirical support that produce beneficial findings. The APA's definition of Evidence-based practice (in psychology, or EBPP) as an expansion of the Institute of Medicine's definition (Institute of Medicine, 2001). According to the Task Force, "Evidence-based practice in psychology (EBPP) is the integration of the best available research with clinical expertise in the context of patient characteristics, culture, and preferences." (APA, 2006, p. 273). The elements of consumer choice and clinician judgment create an important distinction between EBPs and ESTs/EBIs/EBTs. ESTs, EBIs, and EBTs (which will be condensed under the term of "EBI" for the remainder of this paper) are generally specific treatments that have been shown effective for select populations (e.g. depression in adult Caucasian females). However, it is not always possible to find an EBI that matches perfectly with a particular client's profile. The EBP framework empowers the behavioral health professional to find a best-as-possible match for his or her client, based on the available research. This is also the preferred language

of the American Psychological Association, so the concept and phrasing of evidence based practice (EBP) will be utilized throughout the remainder of this paper.

This paper will utilize the APA definition of Evidence Based Practice (EBPs); however, this literature review will pool from research that involves the terms EBIs, ESTs, and EBTs as they all hold the commonalities of broadly being strategies that are research-tested and designed to address a specific behavioral health issue. Although the APA generally conceptualizes practices in terms of direct services (such as counseling and assessment), this review will follow the broader conceptualization of EBP as defined by the APA Task Force on Evidence-Based Practice with Children and Adolescents (2008). Their conceptualization includes dimensions related to the need for practices to be developmentally and culturally appropriate to the child and his or her family. Additionally, they incorporate the roles of problem solvers, consultants, and collaborators into the role of practitioners implementing services. This appears to appropriately broaden the scope of EBPs to include the indirect interventions (in addition to traditional direct services) often seen in school settings. The Task Force also acknowledges that although many interventions are designed to be implemented by psychologists, other adults in children's ecology are increasingly becoming involved in the provision of services such as teachers, administrators, direct care professionals, and family members.

Evidence Based Practices in Schools

When children are able to access behavioral health services at school, they may encounter a myriad of therapeutic interventions, some that may have research support and many that do not. These interventions can range from preventative to reactive. Preventative services may include school-wide (universal) social skills training, teaching

of behavioral expectations, and drug-use prevention education. Reactive (or targeted) interventions may include social skills groups, executive functioning groups, individual counseling or behavior management.

There are over 150 evidence-based mental health promotional programs and mental health treatments for youth ages 0 – 17 from which school based providers can choose, not including substance abuse programs (NREPP, 2014). To support the use of EBPs with youth in schools, multiple levels of policies, funding, and organizations have been implemented already. For instance, the No Child Left Behind laws and the 2004 reauthorization of the Individuals with Disabilities Education Act (IDEA) mandated the use of EBPs in schools. Centers for the support of EBPs are starting to appear throughout the U.S., including the New York State Evidence-based treatment Dissemination Center as well as the Coordinating Centers of Excellence developed by the State of Ohio Department of Mental Health (Aarons et al, 2012a). However, despite efforts to provide federal funding for implementation of a system of mental health care for youth, implementation of EBPs has been limited (Walrath et. al., 2006).

There is a range in the quality of these services and implementation within school settings can be exceedingly low (Atkins et. al, 2003; Ennett et al., 2003; Gottfredson & Gottfredson, 2002). For example, there are research-based interventions to treat disorders such as anxiety and depression. However, they are rarely used with school children, and when they are used they are used incompletely (Aarons & Palinkas, 2007; Chaffin & Friedrich, 2004; Hoagwood & Olin, 2002; Holzer et al., 2007). This may be due to a host of barriers including: limited resources (such as money and time), negative staff beliefs about interventions, competing priorities, policies, and tendencies to provide locally

developed programs or marketed products that align more closely with past practice than what the evidence base recommends (Forman et. al, 2013; Kumar, O'Malley, Johnston, & Laetz, 2013).

Hallfors and Gaudettte (2002) suggested that these results support Rogers' (1995) Diffusion of Innovation theory concept of *compatibility*. The basic concept in *compatibility* is that long-standing programs are likely to have a stronger perceived fit with an adopter's (such as a teacher, a principal, or an entire school culture) current values, experiences, and needs. A national study of elementary schools (Hanley et al., 2010) indicated that of the elementary school that provide substance use prevention curriculums, only 35% are evidence based. Furthermore, districts with lower SES and majority African American or Hispanic students were provided fewer prevention programs than districts with higher SES and majority Caucasian students. Though useful information with regards to the use of substance use prevention programs, this research does not provide us with a clear picture of evidence based behavioral health intervention use. Furthermore, these studies were cross-sectional, and therefore, do not show causal relationships to inform us as to why implementation and fidelity are so low. The field of implementation science is dedicated to trying to find these answers.

The concept of fidelity to intervention plays an important part in the effectiveness of said interventions. A meta-analysis by Wilson et al. (2003) investigating school-based prevention programs targeting aggressive behaviors indicated that implementation was the most important factor influencing outcomes. Levels of treatment integrity can be negatively correlated with student behavior problems (DiGennaro et al., 2005, 2007; Wilder, Atwell, & Wine, 2006). If interventions *are* implemented in schools, whether

research based or not, they are rarely implemented to fidelity when compared to research-based programs (Gottfredson & Gottfredson, 2002). For instance, those who implement behavior plans rarely follow through with their consultation with a specialist (Codding, Feinberg, Dunn & Pace, 2005). Also, in a study of drug use prevention practices in schools, of the 1795 schools sampled only17% used an efficacious method for delivery, and only 14% used efficacious content (Ennet et al., 2003). This brings about the question of what is interfering with EBPs being used in schools.

Barriers to Use of EBPs

Barriers to the use of EBPs are various. They range from systems level variables all the way down to individual personal variables. It is important to identifying these barriers in order to identify targets for intervention.

Some barriers have to do with the system into which interventions are implemented. These can include lack of capacity for monitoring impact, lack of technical assistance, lack of staffing and equipment, financial and time limitations, poor organizational support (Aarons et. al, 2012b, Durlak & Dupre, 2008; Fixsen et al., 2005; Greenhalgh et al., 2004; Rogers, 2003). A survey of school clinicians and program directors who had attempted to implement the Cognitive Behavioral Intervention for Trauma in Schools (CBITS) highlighted several barriers to implementation in a school setting. These barriers included competing responsibilities, lack of parental engagement, logistical barriers (such as the format of the school schedule and finding time), and lack of support from administrators and teachers (Langley et al., 2010). Competing responsibilities may have included lack of time to run the CBITS groups due to more pressing tasks or limitations in coordinating schedules. Low parent engagement was

described as difficulty in contacting parents and engaging them in treatment, especially those from difficult economic situations who work long hours and/or multiple shifts. At times this may have also included parent's resistance or hesitation to follow-through with components of the CBITS intervention. Logistical barriers often included difficulties finding space to run CBITS groups and finding times with which to run them. Support from teachers and administrators included buy-in, support, readiness of the school, and assistance from administrators to overcome potential barriers. These results have been frequently repeated, with limitations to available money also playing a factor (e.g. Cawood, 2010; Hicks et al., 2014).

On a personal level, clinician proficiency in utilizing a strategy can impact the implementation of evidence-based practices. (Biedas & Kendall, 2010). In a study by Hicks et al. (2014) slightly over 25% indicated that they felt that their graduate training in behavioral EBIs was adequate, suggesting that the majority of certified school psychologists feel ill prepared to implement behavioral evidence based interventions. Surprisingly, this did not differ between practitioners trained at the doctoral and non-doctoral levels. The least serious barriers indicated by the school psychologists were those surrounding EBIs not being consistent with the school psychologists' approach and EBIs not being culturally appropriate. These latter points suggest that school psychologists find that EBIs generally fit with how they practice and that they find EBIs to be appropriate for culturally diverse students. This provides us with some insights into the attitudes of school psychologists' attitudes towards EBPs, but far from a complete picture of all those who provide services in schools. Forman, Fagley, Chu, and Walkup (2012) attempted to identify factors that affect the implementation of cognitive

behavioral interventions in schools. They identified four factors that led to a school psychologist's potential for implementing these interventions. These included a clinician's own beliefs about the efficacy and acceptability of an intervention, the clinician's beliefs around the available organizational resources to implement the intervention, the existence of administrator support, and the clinician's commitment to promote the intervention. In addition to issues around time and training, implementers of individualized positive behavior interventions (IPBIS), five of the most problematic barriers were related to staff beliefs about how to work with children who struggle with behaviors (Bambara et al., 2012).

Studies such as these provide a wealth of information. Practitioners are struggling to implement EBPs due to lack of support from administrators, teachers, and parents. They are lacking resources such as technical assistance, equipment, staffing, and the finances implement interventions. Time is an eternal barrier given students and practitioners many demands. Clinician's also struggle with their own feelings of efficacy and adequacy, which may or may not be a result of poor or inadequate graduate training. Finally, and most related to this study, there are the clinician's own feelings around the acceptability of interventions and his or her beliefs about the utility of evidence based interventions. All this information provides opportunities for intercession. Lack of resources and time can be addressed through policy and staffing issues. Clinician efficacy issues can be addressed through bolstering graduate training programs and supervision. Attitudes towards evidence-based practices can be addressed through provision of information to increase knowledge (Rogers, 2003).

The available research marks provider attitudes as a potential barrier to implementation, but it has not assessed school based provider attitudes directly. Understanding school-based provider attitudes provides a necessary next step towards finding what moderates and impacts practice.

Connecting Attitudes towards Action

In an effort to increase the use of EBPs, considerable research has been focused on identifying the barriers and facilitators to EBP use. This research is often based on theories such as Roger's (2003) Diffusion of Innovation theory. Roger's innovation diffusion theory includes five stages that are required for an innovation to be used. The first stage is the knowledge stage at which the population is exposed to the concept and how it works. The next stage is the persuasion stage during which the population develops their own attitudes towards the innovation. Following that is the decision stage in which the population engages in a thought process of whether to adopt the innovation or not. The next stage is the implementation stage in which the decision is made to adopt the innovation. Finally, there is the confirmation stage in which the population decides whether the innovation should be sustained or not.

The first three stages have received the strongest support and have been coined the "K-A-P" or "knowledge-attitudes-practice" process (Rogers, 2003). Such support includes research correlating knowledge of EBP with attitudes towards evidence-based practice, with less awareness having been correlated with more negative attitudes (Nakamura, Higa-McMillan, Okamura, & Shimabukuro, 2011). Also, attitudes have been correlated with the use of, and intention to use, EBPs (Nelson & Steele's, 2008; Paxton, Chaplin, Selman, Liddon, Cramb, & Dodson, 2003; Pinto, Yu, Spector, Gorroochurn, &

McCarthy, 2011; Rodriguez-Soto, Bernal, & Cmba-Aviles, 2015). A recent study by Rodriguez-Soto et al. (2015) suggested correlations between Puerto-Rican providers' knowledge and attitudes, attitudes and behaviors, and knowledge and behavior. These studies provide support for the K-A-P process, and suggest that attitudes may provide an important mediating role between knowledge and practice.

Complexity of Clinician Attitudes towards EBPs

The weight of providing evidence based services rests primarily on the shoulders of behavioral health providers. Since the EBP movement has started, providers have expressed varying views. Many believe that some mental health treatments work better than others (e.g. Silverman & Hinshaw, 2008; Weisz, Jensen-Doss, & Hawley, 2005; Weiss, Jensen-Doss, & Hawley, 2006) and that "usual care" can actually be harmful (U.S. Public Health Service, 2001). The evidence base appears to support this. For instance, a meta-analysis conducted by Weisz, Jensen-Doss, and Hawley (2006) explored 32 random control trials indicated that evidence based treatments for youth showed better outcomes than usual care. Yet, there are many who are skeptical of EBPs. They can perceive EBPs research as being poorly designed and without validity. They indicate that EBI and EBP research tends to use homogenous populations that do not represent the clients served in clinics, do not have appropriate control groups (to establish effectiveness over other treatments), tend not to address the etiology of comorbid disorders, are too focused on brief treatment packages, and are not realistic for application in community settings (Stewart, Stirman, & Chambless, 2012; Toth & Manly, 2011; Westen, Novotny, & Thompson-Brenner, 2005). Some critique the technology and criteria that establish empirically validated therapies. Providers sometimes state that the random control trials

are too constraining, overly representative of the medical model, and they put long-established therapies such as humanistic and psychoanalytic therapies at an unfair disadvantage (Bohart, O'Hara, & Leitner, 1998). Clinicians also report feeling that manualized treatments and EBPs can be too constricting, not allowing clinicians to tailor interventions to meet clients' complex needs in real-life contexts (Addis & Krasnow, 2000; Addis et al., 1999; Baumann et al., 2006: Nelson & Steele, 2008; Nelson et al., 2006; Walrath et al., 2006). Meanwhile, others feel that there is too much reliance on human judgment when deciding upon an appropriate EBP and that there is not enough guidance around how to choose an intervention when the research is unclear or insufficient (Knaapen, 2013).

Attempts have been made to measure provider attitudes, especially using survey tools. Studies at the individual clinician level have shown that various demographic traits have inconclusive associations with attitudes towards evidence-based practices. Female clinicians and clinicians who are Caucasian tend to have more positive attitudes towards EBPs (Aarons et al., 2010; Aarons et al., 2012a). A clinician's theoretical orientation towards therapy does seem to have some impact on clinician's attitudes towards EBPs. Therapists with cognitive-behavioral, cognitive, or behavioral orientations tend to hold more favorable attitudes towards EBPs than those from other orientations (Addis & Krasnow, 2000; Finley et al., 2014; Nelson & Steele, 2008; Stewart & Chambless, 2007).

Investigations into the relationship between educational attainment and professional experience show no conclusive trends. Several studies have shown no significant differences in attitudes attributable to providers' educational attainment (Bookman-Frazee, Garland, Taylor, & Zoffness, 2009; Nelson & Steele, 2008; Stewart &

Chambless, 2007). Yet, some studies have suggested that those who have attained lower levels of education, such as Intern-level providers, can show more positive attitudes towards EBPs than more established providers (Aarons, 2004; Aarons & Sawatzky, 2006; Rodriguez-Soto et al., 2015). A study by Jenson-Doss, Hawley, Lopez, and Osterberg (2009) also indicated that those with less education held more favorable attitudes towards EBPs. Yet, a study by Nakamura et al. (2011) suggested that licensed and doctoral level practitioners also hold more favorable attitudes towards youth-focused EBPs than those who are unlicensed or Masters level.

Looking at behavioral health provider's professional discipline (such as family therapist, social work, or psychologist), the results are inconclusive. Some research indicates that professional discipline does not appear to have significant impact on one's views on EBPs (Aarons, 2004; Aarons et al., 2010; Aarons et al., 2012a; Bookman-Frazee et. al, 2009; Jensen-Doss et al., 2009), while other research suggests that those who are trained in social work report significantly more positive attitudes towards EBPs than psychologists (Aarons, 2010; Aarons et al, 2012a). The reasons for these differing results are unknown at this time.

Work culture can have an impact on provider attitudes. Those who work within cultures that are more proficient, engaged, and less stressful report more positive perceptions of EBPs (Aarons et al., 2012b). Proficient work cultures are those in which there is an expectation for providers to maintain up-to-date clinical knowledge and put the needs of their clients first. Engaged climates are those in which providers are able to maintain investment in their work with their clients and feel as though their work is worthwhile.

The impact of where one practices appears significant, with wraparound providers showing more positive attitudes than traditional outpatient providers (Aarons, 2004) and psychologists in academic settings expressing more positive attitudes than those in private settings (Addis & Krasnow, 2000). Within a provider's work context, the level of bureaucracy and existence of written policies around intervention use has been shown to be related to provider's attitudes towards EBPs (Aarons, 2004). Level of bureaucracy is related to the complexity of an organization's administrative design, with higher levels of bureaucracy likely involving more "red tape", making those agencies more slow to respond to change (such as updates in research). Existence of written policies was specific to policies about the expected use of EBPs. Providers who work in contexts with lower levels of bureaucracy and with written policies in place around EBP use tend to report more favorable attitudes towards EBPs. Notably, research by Stahmer and Aarons (2009) comparing education based early intervention providers (who provide academic and behavioral health services to children in need from birth to 3 years of age) to public mental health providers has been the first to compare school providers to community based providers. The EI providers showed more positive attitudes towards EBPs. Their results demonstrated demonstrated that training, profession, expectation, role, or context may have impact on one's attitudes towards EBPs for children diagnosed along the Autistic Spectrum when comparing these two populations. This leaves to question what further exploration into school-based providers might reveal.

Measuring Attitudes towards Evidence Based Practices

In attempt to capture and measure the complexities of provider's attitudes towards evidence-based practices, Aarons developed the Evidence Based Services Practice

Attitude Scale (EBPAS, Aarons, 2004; Aarons et al., 2010). He identified four domains of provider attitudes towards innovation that include: *divergence*, or a clinician's favorable or unfavorable attitudes towards EBPs; *openness*, or a clinician's willingness to attempt to use an EBP; *requirements* to which clinicians respond for EBP implementation; and the perceived *appeal* of the EBP. These four domains were identified through available research. The domain of *appeal* was developed out of research that indicated that a clinician will more likely adopt an innovation if the clinician finds the innovation appealing (Aarons, 2004; Frambach & Schillewaert, 2002). Aarons also indicates that this domain was inspired by research about provider efficacy and processes of persuasion (Aarons, 2004; Cialdini, Bator, & Guadagno, 1999; Tormala & Petty, 2002; Watkins, 2001). The *requirements* were developed from research that indicated that clinicians vary in the level to which they may adopt an innovation depending on what is being required by their superiors (e.g. supervisors or agencies; Aarons, 2004; Garland et al., 2003).

Variations in an individual and/or an organization can impact the extent to which an innovation is adopted as well (Aarons, 2004; Glisson, 2002). The openness domain was based on research in workplace contexts that suggests that the openness of an organization to an innovation is an important aspect of a responsive organization that can meet multiple needs and demands (Aarons, 2004; Anderson & West, 1998; Birleson, 1999; Fiol & Lyles, 1985; Garvin, 1993). The divergence scale was developed out of research that suggests that manualized evidence based treatments can be seen by clinicians as contrasting with how they see effective practice (Aarons, 2004; Garland, Kruse, & Aarons, 2003) as well as business related research that indicates that skepticism

in use of new practices is prevalent (Aarons, 2004; Garvin, 1993). Early studies using the EBPAS have linked provider attitudes to both organizational (e.g., clinic structure, policies, climate, organizational culture, and leadership) and individual provider characteristics (e.g., age, educational level, and level of professional development) (Aarons et al., 2010).

Since developing the original EBPAS, Aarons, Cafri, Lugo, and Sawatzky (2012a) have expanded the EBPAS from the original four domains to twelve, including *limitations, fit, monitoring, balance, burden, job security, organizational support,* and *feedback*. These factors were developed using newly available literature as well as focus groups with program managers and clinicians. Four hundred twenty participants from sixty-five mental health programs were provided a pilot version of the new EBPAS. Factor analysis indicated the existence of eight distinct new domains that do not overlap with the original four. Preliminary results from the EBPAS-50 (the expanded version of the original EBPAS) suggests that female clinicians find greater fit with EBPs and client needs, feel less burdened by EBPs, and are more accepting of feedback regarding EBP use. Clinicians from private non-profit programs perceived greater fit between EBPs and the needs of their clients in contrast to publicly funded programs. Higher levels of clinical experience were associated with the perception of therapy as being a balance between the art (or skills of the practitioner), and science (the technology used to treat a client). African American clinicians found fewer limitations to EBPs than Caucasians, yet Hispanic clinicians indicated lower perceived fit between client characteristics and EBP as well as a higher level of burden. These additional factors have the potential of providing us with greater detail as to how school-based providers perceive EBPs.

Based on the available research, it appears that despite the investment that the American Psychological Association is placing into EBPs, the perception in the field of behavioral health is mixed. Behavioral health providers may feel that the conditions under which EBPs are examined are too perfect and controlled. Despite positive results under highly controlled conditions with singularly diagnosed subjects, these EBPs may perform poorly. However behavioral health providers seem to feel that EBPs will not be as effective in real-world environments with clients who are often diagnosable with comorbid disorders or, in the least, who are under multiple stressors. Research investigating a behavioral health provider's owns demographic characteristics have suggested some patterns in who views EBPs more positively, with females and those who are Caucasian showing more positive attitudes. There seems to be a paradoxical effect occurring in the realms of training and experience, with Intern-level practitioners and those with lower levels of education, as well as those who are licensed at the doctoral level having more positive attitudes towards EBPs than more experienced or Master's level practitioners. Those with cognitive, behavioral, or cognitive-behavioral theoretical orientations tend to favor EBPs more than others while associations with professional discipline are not nearly as strong.

Meanwhile environmental, especially work environment factors seem to have an impact on how a practitioner views EBPs. Those who work in environments where EBPs are valued and expected tend to show more favorable attitudes. Additionally, those who work in environments where they are expected to be up-to-date on clinical research, and client focused, and in which they feel that they are performing worthwhile work and perceive less stress tend to have more positive attitudes towards EBPs. These patterns, or

lack of patterns, suggest that we may not be asking the right questions, or that our tools have not been sufficiently sensitive.

Limitations to Attitude Studies

The extant research provides helpful preliminary information, suggesting that attitudes towards EBPs may be impacted by factors including a behavioral health provider's: gender, race, theoretical orientation, professional experience, discipline, setting, work environment, and work culture. However, there are a number of limitations of this research including: low response rates, small sample sizes, missing data, data collected in multiple settings within studies, use of scales lacking in specificity, and lack of moderator data. Very few studies focus on mental health providers who provide services within a school setting. Most studies are focused on therapists who perform behavioral health/mental health treatment outside of primary and secondary schools. School providers, such as school psychologists, guidance counselors, and social workers work under a different context with different expectations for diagnosis, service delivery, and billing. Stahmer and Aaron's (2009) research results could be evidence to the effect of these differing systems and expectations. Not only did the school oriented early interventionists show more positive attitudes towards EBPs in general, but they also had higher scores on the scales of requirements, appeal, and openness, and lower scores on divergence. As a result, Stahmer and Aaron suggested that, in comparison to mental health providers, early interventionists may be more likely to take on an EBP if required to; more likely to take on an EBP if they found the practice intuitively appealing; more likely to try a new EBP; and more likely to consider EBPs as clinically useful. This

current study proposes to investigate the attitudes of a broader set of school-based providers.

Moving Towards Equitable, Socially-Just Provision of Behavioral Health Services

Youth who live in urban environments face notable academic and behavioral health challenges. They often have to cope with challenges of high crime, violence, substance abuse, poor nutrition, the unemployment of a parent, and low income within their families (Anakwenze & Zuberi, 2013; Cauce, Stewart, Rodriguez, Xohran & Ginzler, 2003; Netzel & Eber, 2003). These students present with more frequent and severe behavioral issues than their non-urban peers (Lassen, Steele, & Sailor, 2006; Sugai & Horner, 1999; Warren et al., 2003).

Urban schools are more likely to have students from minority cultures and races, children of low income, and non-English speaking children (Council of the Great City Schools, 2003). Minority youth are frequently over identified for Special Education services under an Emotional Disability (Children's Defense Fund, 2011; Office of Special Education Programs, 2011). This is especially so for African American youth who make up just over 17% of the public school student body, nearly 29% of whom are identified as qualifying for ED (OCR, 2006). Low SES school districts largely composed of minority students (such as Hispanic or African American) provide fewer prevention programs than those schools of higher SES, composed of mostly Caucasian students (Hanley et al., 2010). Minority students, especially African American youth, run an elevated risk of being placed into treatment facilities (National Council on Crime and Delinquency, 2007). These suggests that urban schools, which tend to have higher

concentration of minority students, are likely misidentifying and underserving their student's behavioral needs.

Still, schools are in a unique position to prevent, if not identify behavioral health issues before they become problematic. EBPs, by definition, have shown effectiveness in resolving behavioral health issues above standard care. It stands to reason that increased use of EBPs has the potential to increase access to services, reduce the disparities in service delivery, and reduce the disproportionality of minority children in out-of-home treatment facilities.

Despite the push from professional organizations for practitioners to take on EBPs, the opinion of the provider community (especially those practicing outside of schools) is mixed. Providers express concern about the reliability and validity of randomized controlled trials, the unrepresentative populations that are used in these studies, and the unrealistically perfect conditions under which they are tested. Provider's views on EBPs can vary depending on professional status, their gender, and their theoretical orientation. There is notable criticism of EBPs coming from some providers, especially those who represent minority populations (especially Hispanic). They have indicated that here may be a poor fit between their client's needs and EBIs (Aarons et al, 2012a). This suggests that we may need to be more critical of our investment into EBPs and investigate their concerns further. Furthermore, there has been no study, up to this point, that investigates the attitudes of the spectrum of school-based providers, those who have optimal access to our students struggling with behavioral health issues in the context of an urban educational setting.

Survey information about urban school-based providers' attitudes can be used to help school administrators, practitioner training institutions, and policy makers understand the perspectives of those providing behavioral health services. This information also has the potential to inform best practices in addressing the needs of children and adolescents. With this information, it is hoped that means will be developed and implemented to increase provider's use of EBPs, thus creating greater access to quality care for the students who need it most.

What Questions Remain

EBPs have been recommended by the APA in order to utilize research to improve patient outcomes (APA, 2006). However, their use in content and delivery is less than desirable (Atkins et al., 2003; Ennett et al., 2003; Gottfredson & Gottfredson, 2002). Preliminary evidence suggests that more knowledge of EBPs is related to improved attitudes in providers (Nakamura et al., 2011). In addition, some evidence suggests that providers with more positive attitudes may be more likely to use of EBPs (Nelson & Steele, 2008; Paxton et al., 2003). Unfortunately, the majority of this research has been conducted in community, hospital, and clinic settings. Only one study (Stahmer & Aaron, 2008) has been conducted with early childhood school professionals. In this study, it appeared that school based providers held more positive attitudes towards EBPs than mental health providers. Therefore, the purpose of the current study is to replicate the Stahmer and Aaron (2008) study by applying the EBPAS scale to an entire community of school-based behavioral health providers.

The primary questions to be answered by this dissertation are: "Is the EBPAS-50 an appropriate instrument to use to identify the attitudes of school-based providers

towards EBPs?", "Do the EBPAS scores vary based on the level of experience of a provider (whether one is a student or a professional)", "Do the EBPAS scores vary based on how a provider is hired (whether one is hired by a school district or not)?", and "Are EBPAS scores correlated with implementation of EBPs?" To gain a cross cutting sample of all providers who provide services within schools, survey methods will be used.

CHAPTER 3

METHODS

Research Design

This exploratory study focused on the attitudes of school based mental health service providers towards evidence-based practices (EBPs). This was a descriptive survey design. The dependent variables were provider's attitudes towards Evidence Based Practices as measured by the EBPAS, as well as their responses on each individual factor of the EBPAS. Based on the results from prior research, the independent variables were school-based behavioral health providers': professional status (intern vs. professional), hire status (school-hired vs. agency-hired), and hours per week of EBP implementation.

Participants

Target participant description. The participants in this study were providers of social-emotional-behavioral services within the context of a school. To participate, these providers needed to deliver at least 1 hour per week of behavioral health services within a school setting. These school-based mental health professionals included school psychologists, school social workers, school adjustment counselors, and guidance counselors. They also included community-based mental health clinicians who provided services within the school context. Participants for this study did not include paraprofessionals, teachers, nurses, or administrators.

Participant enrollment. In order to identify a participant pool, a request for a listing of potential participants was submitted to the Executive Workgroup (EWG) of Boston Public School's Comprehensive Behavioral Health Model (CBHM). The EWG is a collection of invested parties, from within and outside of BPS, working to lead and strategically plan the CBHM. The request was for the names of supervising administrators, such as supervisors, principals, and department heads. The principal investigator also attended Boston Area School-Based Behavioral Health Collaborative meetings to solicit support from district and community agency directors. The Collaborative is a meeting of administrators from the Boston Public Schools with leaders and representatives for local community agencies, such as state departments of mental health and child/family services, behavioral health providers, and non-profits.

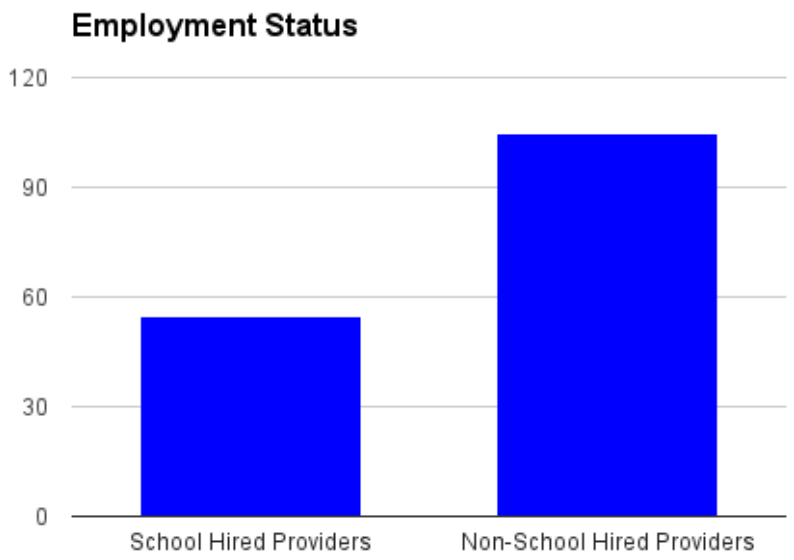
Using a recruitment script, contact was made in person, phone, or email with the supervising administrators to explain the research and to request support for completion of the survey. Once support was obtained, the researcher inquired with the administrator as to the best method for soliciting participants for this study within their agency/school. This frequently included attending meetings, but also involved attending trainings, and phone/email contact with the potential participants. Based on the recommended method for contact, the researchers followed through on contacting potential participants using a script (for phone or direct contact) or email/paper letter (Appendices A - C) which included a brief explanation of the study, description of the approvals from the UMass IRB, account of the expected time to complete the survey, and a depiction of how each participant would be thanked for his or her time (i.e. a gift card of nominal value). Once a participant agreed to take part in the study, the individual was given a passive informed

consent form (with no signature required). Through involvement in the study, the individual indicated that he or she was consenting to participate in the study. The participant was able to withdraw consent at any time.

Participant demographics. The principal investigator was granted permission by agency/department leaders to survey staff from one school-based department (the BPS Behavioral Health Department, composed of about 55 school psychologists, 8 social workers, and 6 pupil adjustment counselors) and seven community based agencies (out of a possible seventeen agencies who were a part of the Boston Area School-Based Behavioral Health Collaborative). A total of 160 participants took part in this study. In order to test the current hypotheses, participant demographic information was gathered including each participant's: employment, professional activities, training and theoretical orientation, and personal characteristics. Depending on the question, missing data ranged from 0 to 101 participants, however over 78% of the demographic questions were missing data from 5 participants or less.

Employment information gathered included: hire status (school district or community agency), job tenure, primary setting of practice (school, community, outpatient, etc.), funding source of income, and primary discipline. Of the total participant pool, 55 (34.4%) were employed by the school district, 99 (62%) were hired by a community agency, and 6 (3.8%) classified themselves as "other".

Figure 1



Participants reported that they had been in their current role for an average of about 4 years (Mdn = 20 months, σ ≈ 59 months). Nearly all (94%) participants indicated that they spent the majority of their day working within a school. Participants' income came from a variety of sources, including: fee for service (9.4% of participants), school funded salary (30.6%), agency funded salary (23.8%), blended salary (20 %) and other funding sources (16.3%). Most participants reported their discipline as being either school psychology (26.3%) or social work (36.9%; See Table 1).

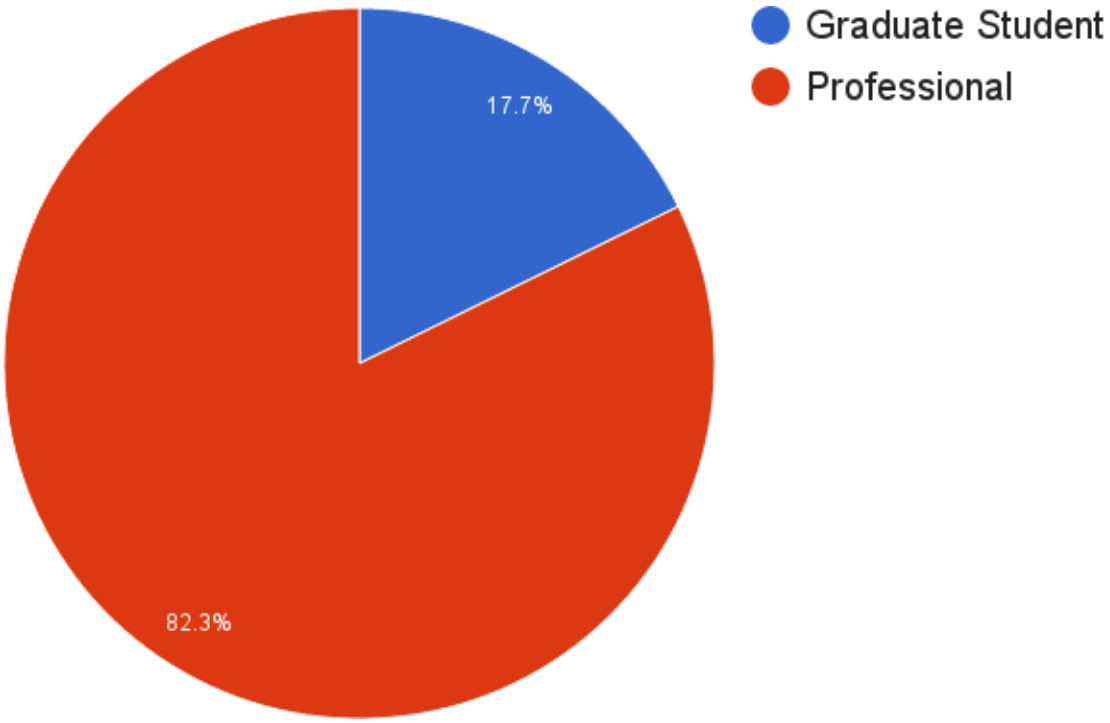
Information gathered from the demographic section of the survey indicated that highest percentage of participants were assigned to only one school (40.6%), with 36.9% being assigned to two schools, 11.3% assigned to three schools, and 9.4% assigned to four or more schools. Participants worked in school settings for an average of 26.41 hours per week (*s* = 12.45). Of those who work in an early/pre-k setting (*n* = 73), on

average, about 15% of their time working in early/pre-k settings (*s* = 18.1). Of those who work in an elementary setting (*n*= 114), they spend about 54% of their time working in elementary grades (*s* = 29.81). Of those who work in middle schools (*n* = 102), they spend on average 34% of their time in middle school grades (*s* = 28.06). And of those who work in high schools (*n* = 100), they spend 45% of their time in high school grades (*s* = 40.26). Note that these percentages do not total 100% as each provider may, or may not, provide services within every grade level. The providers indicated that they provided behavioral health services within an average of 2.5 schools (*s* = 3.83). Participants attended almost 3 meetings per week for the purpose of treatment planning or problem solving around students' needs (*Mdn* = 2, *s* = 2.68). They spent an average of 3 hours per week researching and planning interventions for students (*Mdn* = 2, *s* = 3.5). They also spent an average of more than 2 hours per week evaluating the progress ("progress monitoring") of their interventions (*Mdn* = 1, *s* = 3.3). Most of their EBP related trainings over the past calendar year were paid for by employers (*M* = 3.88 trainings, *Mdn* = 3, *s* = 4.12), then paid for by themselves (*M* = 1.1 trainings, *Mdn* = 1, *s* = 1.55), and then by other funding streams (*M* = .89 trainings, *Mdn* = 0, *s* = 1.59). Providers reported that they spent an average of almost 10 hours per week implementing evidence based practices (*Mdn* = 6, *s* = 9.66).

Training and orientation information was gathered, which indicated that almost half (49.4%) of the participants held a masters degree. The remainder held some form of graduate graining (1.9%), a specialist degree (3.1%), a masters plus a specialist degree (21.3%), double masters degrees (10%), a doctorate degree (11.3%), other training (2.5%), or missing data (.6% or 1 participant). The majority of participants were licensed

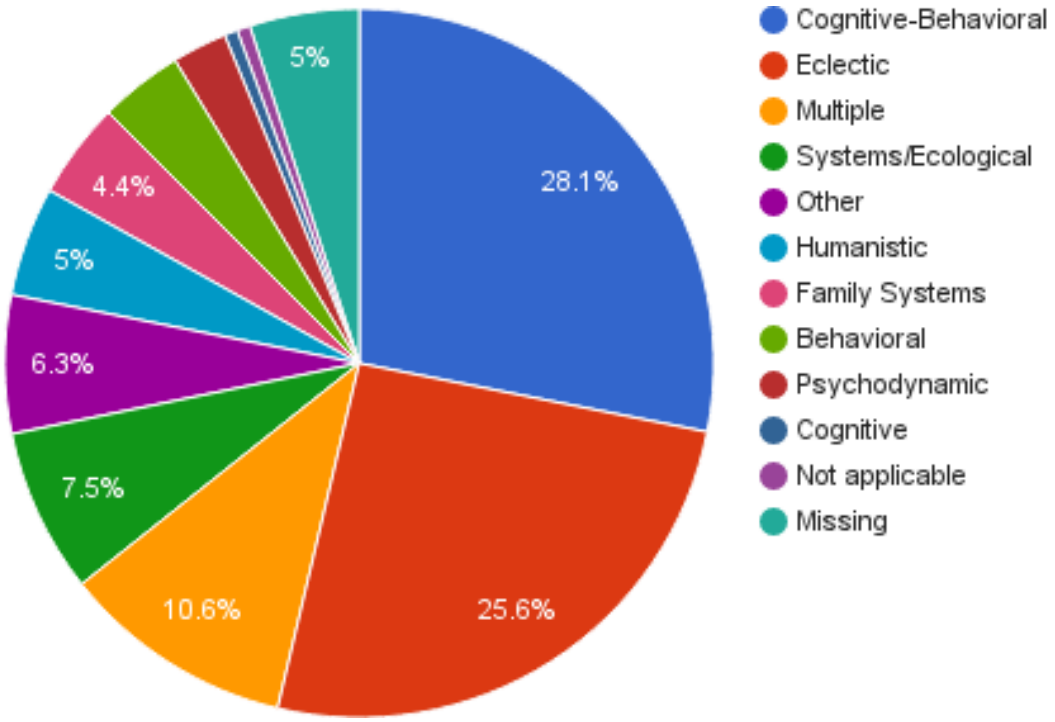
professionals (65%). The remainder were either graduate students (17%) or non-licensed professionals (16.3%) or did not respond (1.3% or 2 participants). For the purpose of analysis, non-licensed and licensed professionals were deemed "Professionals" and any graduate student was deemed "Student"

Figure 2: Professional Status



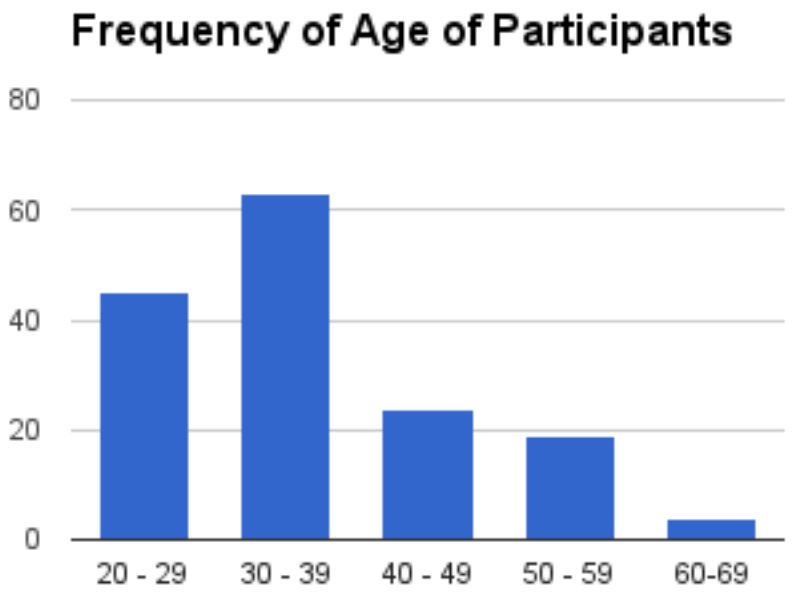
Most participants identified their theoretical orientation as either cognitive behavioral (28.1%), eclectic (25.6%), or as maintaining multiple theoretical orientations (11.9%). The remainder identified themselves as maintaining a behavioral (3.8%), cognitive (.6%), family systems (4.4%), systems/ecological (7.5%), humanistic (5%), psychodynamic (2.5%), other (6.3%), not applicable (.6%), or didn't respond (3.1% or 5 participants). Participants indicated that, on average, they had spent over 8 years in their current profession ($\sigma = 8$).

Figure 3: Theoretical Orientation



Personal demographic information gathered included participant's age, gender, and race. The average age of the participants was just over 36 years old (*Mdn* = 33, *s* = 9.96).

Figure 4:



The majority of the participants were female (83.8%) and Caucasian (66.9%). Although there is no available literature to identify how this sample compares to the entire population of school based behavioral health providers in the Boston Public Schools, however this sample was relatively similar racially to teachers in the district (BPS Communications Office, 2014; see Table 2).

Table 1

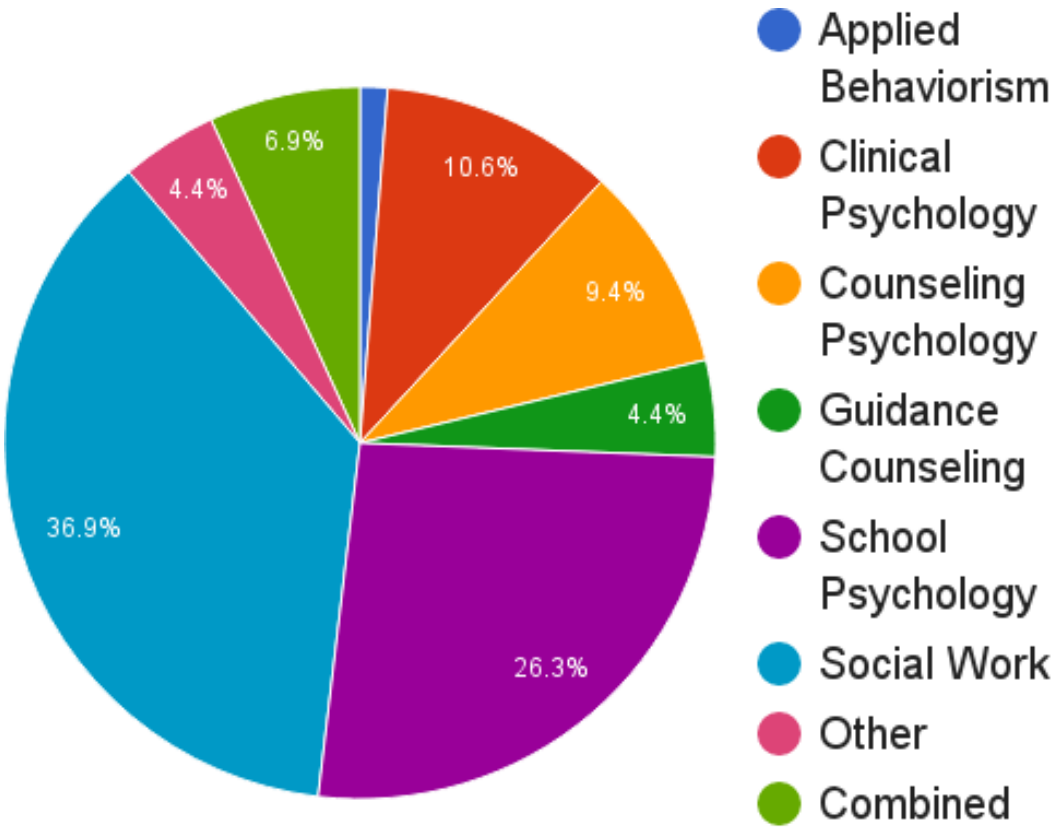
Participant Race

	BPS Tea-chers	Whole Sample	Students	Profes-sionals	School Hired Providers	Non-Sch Hired Providers
Race		Frequency (%)				
African American	(21)	17 (10.6)	1 (3.6)	16 (12.3)	5 (9.1)	12 (11.4)
Asian	(6)	5 (3.1)	1 (3.6)	4 (3.1)	2 (3.6)	3 (2.9)
Caucasian	(62)	107 (66.9)	22 (78.6)	83 (63.8)	35 (63.6)	72 (68.6)
Ha/Pac. Islander	_	1 (0.6)	_	1 (0.8)	_	1 (1)
Hispanic	(10)	10 (6.3)	3 (10.7)	7 (5.4)	6 (10.9)	4 (3.8)
Multi-Race Non-Hisp	_	4 (2.5)	_	4 (3.1)	1 (1.8)	3 (2.9)
Native American	_	1 (0.6)	_	1 (0.8)	_	1 (1)
Other	(1)	12 (7.5)	1 (3.6)	11 (8.5)	4 (7.3)	8 (7.6)
Missing	_	1 (0.6)	_	1 (0.8)	_	1 (1)

The proportion of agency hired clinicians, school psychologists, social workers, and guidance counselors is likely askew as: a) this researcher was only granted access to the staff of seven out of the eighteen agency's that partner with BPS in the Boston Area

School-Based Behavioral Health Collaborative (2014-2015), b) there was no mutually agreed upon time made to survey the BPS guidance counselors and social workers, so very few were surveyed, and c) nearly all of the BPS school psychologists participated in the study.

Figure 5: Discipline of Participants



Procedures

Data collection was held during the winter of the 2014-2015 academic year. Once the respective administrator for each school or clinic established a preferred method of contact, that medium was used to contact potential participants for participation in the study. For the most part, program directors invited this researcher to their staff meetings, during which the survey was generally given to their staff at the beginning or at the end of the meeting. This was the case for the sample of school psychologists and community providers.

Survey. Participants were given the options of completing the survey on their own (on paper), via emailed (electronic) Word document, or in a live format (in person or via phone interview). The majority of participants completed the surveys on paper during their staff meetings with the researcher present, as noted earlier. The survey included questions related to participant demographics as well as a measure of attitudes towards evidence based practices. To measure provider attitudes towards evidence-based practices (EBPs), the Evidence Based Services Practice Attitude Scale (EBPAS) was included (Aarons, Cafri, Lugo & Sawitzky, 2012). The EBPAS-50 is a 50-item questionnaire (See Appendix D) with measures for: divergence (unfavorable attitudes towards EBPs), openness (to use EBPs), responsiveness (to the requirements necessary for EBP implementation), appeal (of EBPs), limitations (to the use of EBPs), fit (with provider's practice), monitoring (by others), balance (of therapy being a science vs. an art form), burden (of integrating EBPs into a provider's work), job security (gained from learning EBPs), organizational support (towards learning EBPs), and feedback (around professional performance) . In this measure, respondents indicate to what degree they

agree with a certain statement on a 5-point scale raging from "not at all" to "a very great extent". For seven subscales, higher scores indicate higher perceptions of approval towards EBPs. The remaining five subscales are reverse scored.

The original EBPAS, which utilized the four scales of divergence, openness, responsiveness, and appeal has been validated. According to Aaron's (2004) study of 322 clinicians, he found good internal consistency for the 4 original scales with Chronbach coefficients between .77 for the total scale to .90 for the requirements subscale. This was confirmed in Nakamura's (2011) study where he found coefficients of .82 for the total scale, .72 for divergence, .81 for openness, .94 for requirements, and .76 for appeal. When Aarons applied the EBPAS-15 on a national scale, the coefficients were slightly different with .76 for the total scale, .66 for divergence, .84 for openness, .80 for appeal, and .91 for requirements (Aarons et al., 2010). According to Aarons (2005), preliminary validity analyses suggest that scale scores vary with organizational and provider characteristics such as training level, educational attainment, type of agency (outpatient vs. wraparound), level of bureaucracy, and existence of policies around EBP use. Aarons expanded this EBPAS to explore whether concepts such as:

> (1) attitudes towards supervision (monitoring/supervision, feedback/ongoing clinical support), (2) EBP fit with work responsibilities (workload, time, organizational support), (3) balancing professional job growth versus status quo (adequate skills, learning, job rewards, status quo), (4) arguments against EBP (EBP fit with real world clients, art versus science, common factors, stigma, characteristics of EBP), (5) training and education (EBP fit with

education/training, training), (6) research practice partnership, (7) EBP effectiveness, and (8) consumer preference…

would add to more depth and specificity in how the EBPAS could assess providers' attitudes towards EBPs. The draft of this new EBPAS had 133 items. This version was tested on a population of 420 providers. After an iterative approach to factor analysis, eight additional factors were identified (beyond the original four) and the total scale was reduced to 50 items. These eight new factors included (with internal consistency reliabilities in parentheses): Limitations (.92), Fit (.88), Monitoring (.87), Balance (.79), Burden (.77), Job Security (.82), Organizational Support (.85), and Feedback (.82).

As indicated by Aarons et al. (2012), the scales of Divergence, Limitations, Monitoring, Competence, and Burden needed to be reverse scored in order to contribute positively towards the overall score of attitudes towards EBPs in the EBPAS-50. For simplification of reporting and interpreting the results, these reverse scored scales will be identified with a "-R" (for example: Divergence-R).

Data Analysis

This survey information was de-identified and entered into a data-base on a non-networked, password protected computer. Paper copies of completed surveys were kept in a locked file cabinet. Scanned copies (which were also de-identified) were kept on a google drive to which only select research team members had access. The data-base computer and file cabinet were kept within a locked room where only researchers related to this study have access. The data was analyzed using the SPSS software package.

Descriptive analysis. First a descriptive analysis was conducted. This was done to assess the representativeness of the sample in comparison to national samples of school personnel with regards to male/female ratio, hire status (school vs. agency), race, professional status (student vs. professional), discipline (e.g. social work, psychology) degree, licensing, and years of experience. Means and standard deviations of respondents were calculated. There was also a descriptive analysis of findings from the survey tool, including total EBPAS score and the individual factors.

Primary Analysis: Validation of tool. The first step in analyzing this data set was to determine whether the sample size was sufficiently large enough to validate the EBPAS-50 and EBPAS-15 instruments. For this, the Kaiser-Meyer-Olin (KMO) measure and Bartlett's Test of Sphericity were used for both instruments. The KMO test "is an index comparing the magnitudes of the observed correlation coefficients to the magnitudes of the partial correlation coefficients" (Fougler, 2015). The Bartlett's Test of Sphericity is used to test a null hypothesis in that there is no correlation between the variables in the sample.

To validate the EBPAS-50 and EBPAS-15 tools exploratory factor analyses was conducted using promax rotation and the principal axis factoring method (Costello & Osborne, 2005; Fabrigar, Wegener, MacCullum, & Strahan, 1999). Visual analysis of the eigenvalues and the scree plots were used to determine the amount of factors being produced by this sample. To test the internal consistency of the EBPAS-50 and EBPAS-15 tools, the reliability of all the factors, as well as the total scores were checked. The reliability coefficients (Chronbach's alpha) of the twelve-factor and four-factor structures were examined.

Secondary Analysis: Testing of Hypotheses.

In order to determine whether parametric tests could be used to test the hypotheses the Shapiro-Wilk Statistic (Ghasemi & Zahediasl, 2012), Levene's test for variance, descriptive statistics, stem-leaf plots, and Q-Q plots were employed, with the EBPAS total scores. Using the Shapiro-Wilk test, the sample was examined as a whole, then by the variable of Experience, and finally by the variable of Employer. Within this test, scores that are significant at the $p = .05$ value or less are considered non-normative. Based on prior research, the hypotheses for this study were that:

- School hired professionals will report more positive attitudes towards EBPs than agency-hired professionals
- Interns will report more positive attitudes towards EBPs than hired professionals,
- And EBPAS scores will correlate with implementation of EBPs

To test the hypothesis, *t*-tests and correlations were used to determine if their overall EBPAS scores were significantly different from each other or correlated with each other. If appropriate (e.g. factor structure held for EBPAS subscales), comparisons and correlations were also run for EBPAS subscales. Levene's test for equality of variance was used through SPSS when conducting t-tests. Within this test, scores that are significant at the $p = .05$ or less are considered to have non-equal variances and would require non-parametric tests to compare means. If the t-test results were interpretable, as per the Levene's test, Cohen's d was calculated in order to identify the effect sizes for any differences. Descriptions of Cohen's *d* generally ranges from .2 (small effect size) to .8 (large effect size). The value represents the difference between two groups using the

measure of standard deviation (e.g. a $d = .8$ would indicate that the two groups are different by eight tenths of a standard deviation).

Tertiary Analyses:

For any factors that held their structure through the exploratory factor analysis, these were explored in the same fashion as in the Secondary Analysis.

CHAPTER 4

RESULTS

The population for this study was sampled from January to May of 2015 and their data was entered into SPSS. Once all surveys were entered, two graduate students re-checked the data for accuracy.

Primary Analysis

The first step in analyzing this data set was to determine whether the sample size was sufficiently large enough to validate the EBPAS-50 and EBPAS-15 instruments. For this, the Kaiser-Meyer-Olin (KMO) measure and Bartlett's Test of Sphericity were used for both instruments. The KMO test assesses the shared variance of survey instrument items (Beavers et al.,2013). With scores of .741 and .754 respectively (Table 3), the degree of common variance among the variables would be considered "Middling", so if a factor analysis was conducted the extracted factors should account for a good amount of variance (Sharma, 1996). It is not recommended to conduct factor analysis with scores below .50. The Bartlett's Test of Sphericity is used to test a null hypothesis in that there is no correlation between the variables in the sample. With significance levels of .000 for both statistics, the null hypothesis could be rejected and therefore it was logical to move forward with a factor analysis (Table 3).

Once it was determined that the sample was appropriate for further analysis, a factor analysis was conducted using promax rotation and the principal axis factoring

extraction method (Costello & Osborne, 2005; Fabrigar et al., 1999) for both the EBPAS-15 and the EBPAS-50. Examining the total variance for the EBPAS-15 provided four factors with eigenvalues over 1 (see Table 4) with over 29% of the variance explained by the first factor. Examination of the scree plot (Figure 5) suggests the existence of around three factors before the break. From this it was decided that there appeared to be four factors revealing themselves. The factor loadings were next examined. The first and largest factor was comprised of nine out of the fifteen total items, strongly pulling from Aaron's factors of Openness (four out of four items matching) and Divergence (three out of four items matching). The second largest factor completely mirrored Aarons factor of Appeal (three out of three items matching). The third largest factor had two items from Aaron's factor of Appeal. The remaining two items from Appeal were also clustered with the first, and largest, factor for this sample. The fourth factor had only one question, coming from Aaron's factor of Divergence.

To test the internal consistency of the EBPAS-15, Chronbach's alphas were calculated for this sample using Aaron's original four factor structure (see Table 5). Based on this sample, the Chronbach alphas for Aaron's four factors were questionable to good, with the alpha for Divergence being "questionable" at .68 and the alpha for Requirements being "good" at .88 (George & Mallery, 2003). These results were comparable to those of Aarons (2012), however this sample produced a stronger alpha for the scale of Divergence (.68) than did Aarons (.59). For the EBPAS-15, overall, the Chronbach's alpha was .81, which is "good". Based on these results, the original four factors held up with acceptable internal consistency using this sample of school based providers. Given this, the EBPAS-15 appeared to be an appropriate tool for measuring

provider's attitudes, however the the utility of using the factor structure (as constructed by Aarons) did not seem appropriate for further analysis.

To test the appropriateness of the new EBPAS-50 instrument, factor analysis was conducted all 50 questions in the EBPAS-50 using the same methods of promax rotation and principal axis factoring extraction. Examining the total variance of the EBPAS-50 indicated thirteen factors with eigenvalues above 1 with over twenty percent of the variance explained by the first factor (Table 6). The scree plot for the EBPAS-50 was visually examined, which again suggested around three factors before the break (Figure 6). It was decided from this information that again four solid factors seemed to be revealing themselves. The factor loadings were next examined. The first and largest factor was comprised of twenty-six items. These items corresponded largely from Aarons factors of Appeal (three out of four items), Openness (four out of four items), Divergence (three out of four items), Limitations (seven out of seven items), Burden (three out of four items), and Organizational Support (three out of three items). Aarons' scale of Monitoring seemed to hold the most integrity with four out of five items from the fourth factor loading onto this scale.

The internal consistency of the EBPAS-50 was also assessed with this sample using Aaron's original twelve factor structure. Based on this sample, the Chronbach's alpha for ten out of the twelve scales were .70 or higher, suggesting acceptable, if not better, internal consistency for each factor. There were two scales with suboptimal reliability. As noted above, from the EBPAS-15, Divergence was questionable at .68. From the newer EBPAS-50, Balance was poor at .58 whereas Aarons' alpha for this scale

had been notably stronger at .79. For the EBPAS-50, overall, the Chronbach's Alpha was .91, which was "excellent".

Given the available information it was determined that the EBPAS-50 did not appear to be an appropriate tool for measuring the attitudes of school based providers towards evidence based practices based on the facts that as the factors did not hold up as strongly as the EBPAS-15 and internal consistency was not as strong. Furthermore, the EBPAS-15 had been validated numerous times. It was decided to move forward with the secondary analysis using the EBPAS-15 total scale as well as the subscale of Requirements since, during factor analysis, the items clustered exactly as they had for Aarons.

Secondary Analysis

In order to determine whether parametric tests could be used to test the hypotheses the Shapiro-Wilk Statistic (Ghasemi & Zahediasl, 2012), descriptive statistics, stem-leaf plots, and Q-Q plots were employed, with the EBPAS-15 Total Scores. Using the Shapiro-Wilk test the sample was examined as a whole (Table 7), then by the variables of Experience, and finally by the variables of Employer. Within this test, scores that are significant at the $p = .05$ value or less are considered non-normative. The significance level for the whole sample approached significance at $p = .056$ however was not significant by the $p \leq .05$ criterion. The significance levels for the sub samples of Interns ($p = .314$), Professionals ($p = .188$), School Employees ($p = .892$), and Non-School Employees ($p = .079$) were not significant so therefore these populations appear evenly distributed. Visual analysis of descriptive statistics indicated that, when rounded, the mean, median, and 5% trimmed means were the same (Table 8). Visual analysis of

stem-leaf plots (Figures 7-11) and Q-Q plots (Figure 12 - 21) and indicated parametric shape and normative lines. Levene's test indicated that the variances for subgroups by Experience (p = .072) and Employer (p = .075) were likely to be equal, further indicating that t-tests were an appropriate tool to compare the differences (Table 9). Based these results it was determined that the sample and subsamples' EBPAS-15 Total scores held largely normative distribution and could be subject to parametric statistical analyses to describe the population and to answer the three core questions for this dissertation.

Looking at the population as a whole, the average total EBPAS-15 score was 2.93 (s = .49, N = 159) suggesting that, on average, the participants agreed with evidence based practices "to a great extent"

To determine whether there were differences between those who were school hired staff and those who were not, as well as between students and professionals, one tailed t-tests were used to compare EBPAS-15 Total scores. Within this sample, there were 28 students and 129 professional behavioral health providers. With this sample, students produced a higher mean score (M = 3.07, s =. 38) than professionals (M = 2.89, s = .51). The difference was significant for Experience with t (155) = 1.74, p = .042 and a small to medium effect size (d = .40, r = .19). It is worth noting that if average scores are rounded to the closest whole number, both subgroups indicated that they agreed with evidence based practices to "a great extent". With regards to employment status, there were 55 school employees and 104 non-school employees within this sample of behavioral health providers. Within this sample, the mean EBPAS-15 Total score for school employees was higher (M = 3.02, s = .43) than for non-school employees (M = 2.88, s = .52). This difference was significant for Employer with t (157) = 1.68, p =

.0475 and a small to medium effect size (d = .27, r = .14). It is worth noting, again, that if average scores are rounded to the closest whole number, both subgroups indicated that they agreed with evidence based practices to "a great extent".

To answer the question of whether there was a correlation between EBPAS scores and implementation of evidence-based practices, 2-tailed Pearson correlations were run using the total sample. Correlations run with the EBPAS-15 (r = .1, p = .238, n = 145) indicated that there were no significant correlations between EBPAS-15 Total scores and average weekly use of EBPs.

Tertiary Analysis

As it was determined that the Requirements scale was the only EBPAS-15 scale that held together through the exploratory factor analysis, this was the sole scale submitted to any further analyses. The process mirrored that of the Secondary Analysis in identifying the normalcy of the scores, the variance in the scores per subgroup, and finally the analyses via t-test and correlation.

In order to determine whether parametric tests could be used, the Shapiro-Wilk Statistic, descriptive statistics, stem-leaf plots, Q-Q plots, and Levene's test for variance were employed using the Requirements factor average score as the dependent variable. Using the Shapiro-Wilk test, the sample was examined as a whole (Table 10), then by the variables of Experience, and finally by the variables of Employer. The p level for the whole sample was significant at .000, so the distribution of scores did not appear normative. Furthermore, the p levels for each of the sub samples were as follows: Interns (p = .012), Professionals (p = .000), School Employees (p = .000) and Non-School Employees (p = .000). Visual analysis of the descriptive statistics indicated that,

when rounded, the mean, median, and 5% trimmed means were the same (Table 8). Visual analysis of stem leaf (Figures 22 - 26). and Q-Q plots (Figures 27 - 36) indicated quasi parametric shape and normative lines Lavern's test indicated that the variances for subgroups by Experience (p = .915) and Employer (p = .228) were likely to be equal, further indicating that t-tests were an appropriate tool to compare the differences. However, presuming that the scores are normative within the population sample, the decision was made to go forth with using parametric statistical analyses.

To determine whether there were differences between those who were school hired staff and those who were not, as well as between students and professionals, two-tailed t tests were used to compare the mean Requirements scores. Within this sample there were 28 students and 128 professional behavioral health providers whose Requirements scores could be calculated. With this sample, students produced a higher mean score (M = 3.08, s = .82) than professionals (M = 2.85, s = .85). The difference for Experience was not significant with t (154) = 1.301, p = .0975. It is worth noting that if average scores are rounded to the closest whole number, both subgroups indicated that they were willing to implement EBPs if required to do so to "a great extent". With regards to employment status there were 54 school employees and 104 non-school hired employees whose Requirements scores could be calculated. Within this sample, the mean Requirements score for school employees was higher (M = 3.09, s = .79) than for non-school employees (M = 2.80, s = .86). This difference was significant for Employer with t (156) = 1.465, p = .021 with small to medium effect size (d = .35, r = .17). It is worth noting, again, that if average scores are rounded to the closest whole number, both

subgroups indicated that they were willing to implement EBPs if required to do so to "a great extent".

A correlation was run to see whether there was a correlation between Requirements scores and implementation of evidence based practices. Two-tailed Pearson correlations were run using the total sample. Correlations run with Requirements (r = -.099, p = .237, n = 144) indicated that there was no significant correlation between Requirements scores and average weekly use of EBPs.

CHAPTER 5

DISCUSSION

This dissertation started with the challenge of identifying a means to increase access of services to urban youth, especially in the district of Boston. The presumption is that, should behavioral health providers for the Boston Public Schools have more positive attitudes towards evidence based practices, they may be more likely to provide more effective and timely services to students. With more effective and timely services for students, students' needs should alleviate more rapidly, providing openings of care for other students who require attention. The initial task of this dissertation was to assess the utility of the Evidence Based Practice Attitudes Scale- 50 Item Survey (EBPAS-50; Aarons et al., 2012) with school based behavioral health professionals to see whether this would be an appropriate tool for measuring school based providers' attitudes towards EBPs. If and once deemed appropriate to use the EBPAS with this potentially unique population, there were three core hypotheses to this dissertation in the hopes of describing the attitudes of school based providers. Based on prior research and theory, the three core hypotheses were:

1. Students were expected to report higher EBPAS scores than Professionals.
2. School-hired providers were expected to report higher EBPAS scores than Non-School hired providers.

3. There would be a correlation between EBPAS scores and use of EBPs in practice.

It was presumed that this information would be useful to the Boston Public Schools as it may help administrators to have a pulse on their providers' attitudes towards evidence based practices and identify potential areas for intervention.

Tool Validation

This study surveyed the attitudes of 160 behavioral health providers who provided services to students within the Boston Public Schools using the EBPAS-50 tool (Aarons et al., 2012) which was an expansion from the original EBPAS-15 (Aarons, 2004). Chronbach alphas suggested that ten out of the twelve factors in the EBPAS-50 had acceptable to excellent reliability. However, exploratory factor analysis suggested that the items did not cluster in the same way as it had for Aarons with this school-based population sample. Over half of the fifty items clustered around one factor, rendering the factor structure uninterpretable. An exploratory factor analysis was then run on the items for the EBPAS-15, which produced a similarly large primary factor, however the factor of "Requirements" remained intact. Based on this information the decision was made not to use the EBPAS-50 for any further analyses, but to pursue any further analysis with the EBPAS-15 total scores (as well as the Requirements factor) which had been validated on several occasions (i.e. Aarons, 2004; Aarons et al., 2010). Unfortunately, in losing the other three (to eleven) factors much of the descriptive strength of these two tools was lost. Furthermore, caution should be exercised when interpreting the results using the EBPAS-15 given that the factor structure did not hold with this population.

There are many potential reasons as to why this school based sample may have produced a different factor structure than prior behavioral health provider samples. Some reasons may be due to clear demographic differences and some may be due to yet-to-be quantified characteristics of this sample. In comparison to prior efforts to validate the EBPAS 15 (Aarons, 2004) and EBPAS 50 (Aarons et al., 2012), this sample was smaller by hundreds of participants and specific to the Boston area (whereas Aarons' studies were focused in San Diego and throughout the US). This sample was similar in average age and gender profile (mostly women), however the racial breakdown was slightly different. Aarons (2012a) study with the EBPAS-50 had a notably larger proportion of Hispanic respondents than this sample. Professionally, Aarons included participants whose highest level of education was a high school diploma and bachelors whereas this study only included those who were moving on to a Masters degree, if not higher. With regards to discipline, this sample included more school-based perspectives, such as school psychology and guidance counseling, whereas Aarons' studies included more traditional clinical disciplines such as family therapy, psychiatry, nursing, and drug and alcohol counseling. Finally, and central to the second hypothesis, Aarons' studies only included professionals who were hired by community mental health programs whereas this sample included a substantial amount of providers hired by the school district of the city of Boston. It is possible that any one of these factors alone, or in combination with others, could have impacted how respondents interacted with the EBPAS-50 tool and how the factors came together.

The way the EBPAS items clustered together may provide us with some insight into the needs of the Boston providers. No identifiable theme could be identified for the large EBPAS-50 factor. However, the items in the EBPAS-15 seemed to cluster around the concept of fit of EBPs with the clinician, the client, and the therapeutic environment, which could be interpreted as being coherent with Roger's concept of *Compatibility* (Rogers, 1995).

Hypothesis 1

Using the original EBPAS-15, the three core hypotheses were tested using the total score. Based on the results of Aarons (2004), Aarons and Sawatzky (2006), Jenson Doss et al (2009), the first hypothesis suggested that students (such as interns and practicum students) would report higher EBPAS-15 Total scores than professionals (who had already graduated and been hired into their profession. With this sample, the hypothesis was confirmed. Behavioral health graduate students provided significantly higher EBPAS-15 Total scores than their professional counterparts, suggesting that their attitudes towards evidence based practices were more positive. Though the difference was statistically significant, the rounded values were the same (3 = "to a great extent") leading to question the practical value of whether this is a meaningful difference. Furthermore, students' scores on the factor of Requirements were higher than the scores of professionals (however not statistically significant). This might indicate that students are more likely to use an evidence based practice if required to do so by their employer, their supervisor, or the state. However, the rounded values were again the same (3 = "to a great extent"), so there may not be much qualitative difference between the populations.

These results are not surprising given that students being trained in behavioral health service delivery today are currently in a zeitgeist where evidence based practices are an expectation coming from professional organizations (such as NASP, NASW, APA), insurance companies, and policy (e.g. IDEA, ESSA). Their training programs are more likely to incorporate the language and skills of EBPs into their curricula than those who were educated years to decades earlier. This likely brings about more comfort, confidence, and efficacy around the use of EBPs. Furthermore, although not significant, students in this sample reported higher scores in the Requirements scale than professionals. This suggests that students are more likely to adopt EBPs if required to do so by their supervisor, agency, or state. This is not entirely surprising given that, as students, they need the approval of others, especially teachers and supervisors, in order to graduate and to move on towards professional status and gainful employment.

Hypothesis 2

The second hypothesis was with regards to whether employment status would impact attitudes towards EBPs. Based on the research of Aarons (2004), Addis and Krasnow (2000) and Stahmer and Aarons (2009) it was expected that school-hired clinicians would hold more positive attitudes towards EBPs than those who were not hired by a school district (e.g. community agency hired clinicians). With this sample this hypothesis was confirmed. School-hired providers reported significantly higher EBPAS-15 Total scores than Non-school hired providers, suggesting that school-hired clinicians held more positive attitudes towards EBPs. Again, though the difference was significant, the rounded average total scores were the same (3 = “to a great extent”). Looking at the factor of Requirements, school-hired clinicians also reported significantly higher average

scores than non-school hired clinicians, suggesting that they may be more likely to adopt EBPs if required to do so by an employer, supervisor, or the state. The rounded values were, again, the same (3 = "to a great extent").

These results seem to support the existing literature regarding differences in attitudes within behavioral health professional groups and extend this literature by specifically including a sample of school-hired professionals. School providers reported more positive attitudes towards EBPs (Aarons, 2004, Addis & Krasnow, 2000; Stahmer & Aarons, 2009). The reasons for the differences between community-hired and school-hired providers may be a result of IDEA policy requiring the use of EBPs (Turnbull, Wilcox & Stowe, 2002). Further, school based providers may be more concerned about facing legal consequences for not providing free and appropriate education (FAPE; Choutka, Deloughty, & Zirkel, 2004; Stahmer and Aarons, 2009; Yell & Drasgow, 2000). Meanwhile, school-hired providers reported significantly higher scores on the Requirements scale than non-school hired professionals. This appears to agree with the research of Stahmer and Aarons (2009) where early interventionists reported higher Requirements scores than community providers. Community based clinicians, especially those who are licensed, can generally work more autonomously without their work being viewed by parties external to the client (save for insurance companies and supervisors, if they have one). School-hired professionals' work is frequently being reviewed by others such as parents, teachers, and administrators especially within mandated IEP meetings. This is not surprising as the majority of school hired provider in the sample were school psychologists whose primary function is to assess for special education eligibility.

One potential challenge towards evaluating the attitudes of professionals towards EBPs was the presumption that they had the permission to employ behavioral health EBPs within a school. Based on individual feedback, for some this was not an option due to role expectations. One guidance counselor wrote, "Any reticence to train for or carry out an evidence based approach to therapy lies in this role conflict (being a guidance counselor, not a therapist) and not with the practice itself". This leads to question whether the items in the EBPAS may need to be re-worded to be less therapy focused, and more direct and indirect intervention focused, so as to not exclude those whose roles may not be to provide traditional therapy, but to provide behavioral health interventions. This returns us to the policies and expectations set upon behavioral health providers and how they impact their abilities to provide services. Unfortunately, the EBPAS-50 factors of Job Security and Organizational Support were not supported through the factor analyses, as these factors may have provided some insight into the perceived expectations of providers' employers. It is worth noting, however that a higher percentage (60%) of School hired providers were aware of policies that promoted the use of EBPs whereas only about 34 percent of Non-School Hired providers were aware of such policies. Most Non-school hired providers (42%) were unaware of whether such policies existed. As suggested by Aarons (2012b) such policies, in addition to organizational culture, may determine the use, and acceptance, of evidence based interventions. Of this particular set of school providers, many were directly or indirectly involved in a roll-out of a comprehensive behavioral health model in which implementation of EBPs has been a focus, if not a requirement (for more information, see: cbhmboston.com). This has

included a focus on training in evidence based practices. Such explicit focus could have led towards more positive views of EBPs on the part of the staff.

Overall, the attitudes towards EBPs and Requirements were positive for the population as a whole, and within each subgroup. This may be due to how the population was sampled. In order to develop a study that would provide information to guide current efforts in the Boston Public Schools, the sample was limited to behavioral health providers who worked within this particular school district. Access to participants was gained through this researcher's relationships with directors of the behavioral health agencies and school departments who attended a monthly behavioral health collaborative meeting. As such, access was not granted to all behavioral health providers in the Boston Public Schools, but only a select few whose directors: a) were regular attendees at the collaborative meetings, and b) were willing to allow this researcher time with their staff. One could argue that directors who volunteered their staff may have a positive bias toward EBPs as this had been a focus of the efforts of the district. Directors with this positive attitude towards EBPs may create an environment, or an expectation, within their staff that they too would appreciate and implement EBPs, lending a bias to their responses to the EBPAS. This might support claims by Aarons around the impact of environment and expectations on attitudes towards EBPs (Aarons, 2004; Aarons et al., 2012a). However, to obtain a more representative sample, a researcher should attempt to access participants from all potential agencies.

Furthermore, the primary researcher was in the room for the majority of the time when the surveys were completed. His presence may have contributed to some response bias as well (e.g. attempting to please the researcher). In the future, it may be better to

obtain a listing of the available school-based providers' email addresses and have participants complete the survey by email or online survey tool (e.g. google forms) in order to address these potential biases.

Hypothesis 3

The third and final hypothesis was focused on whether there was an interactional effect between attitudes towards EBPs and practice of EBPs. Based on the K-A-P theory and research from Nelson and Steele (2008), Paxton, Chaplin, Liddon, Cramb and Dodson (2003), Wang et al. (2015), and Rodriguez-Soto, Bernal, and Cumba-Avilés (2015), it was expected that there would be a correlation between EBPAS Total scores and reported practice of EBPs per week. With this sample, this hypothesis was not confirmed. EBPAS-15 Total scores did not correlate significantly with reported average hours of implementation of EBPs (and neither did the subscale of Requirements). This suggested that there may not be an interactional effect between attitudes and practice with regards to EBPs. This seems to support the work of Rodriguez-Soto (2015), suggesting that there may be stronger predictors to the employment of EBPs such as knowledge, age, or educational attainment. Yet, there may also be some systemic barriers at play.

Looking at each population's reported average weekly implementation of EBPs may provide some insight. Despite providing higher EBPAS-15 Total scores than professionals, students average 5.75 hours per week of EBP implementation as compared to 11 hours per week by professionals. This could be due to limitations in practice imposed upon them due to being students and/or due to only being required to complete their practicum or internship part time. Similarly, school hired professionals who had reported higher EBPAS-15 Total scores only provided 9.23 hours per week of EBPs

while non-school hired professionals provided 10.29 hours. This difference may not seem large, but it is a large difference when considering how many hours each population works within a school building (Table 11). School-hired professionals averaged 35.20 hours per week in the schools whereas non-school hired professionals averaged 21.85 hours, so non-school hired professionals provide a higher amount of EBPs per hour in the schools (.47 hours of EBPs/available hour) than did school-hired professionals (.26 hours of EBPs/available hour). So, those who would be expected to report more hours of EBP practice (students and school-hired clinicians) actually reported fewer hours of EBPs, which could have impacted the correlation.

Another potential reason as to why school hired providers were unable to provide more hours of EBPs may be inherent to their role and responsibilities in the Boston Public Schools. The BPS Behavioral Health Department is comprised of about 70 staff (including school psychologists and social workers) who are responsible for providing behavioral health services for the 125 schools in the district. The school hired providers in this sample were responsible for an average of about four schools whereas non-school hired providers were responsible for an average of of about 1.5 schools. This suggests that they are likely traveling from school to school throughout each school day. Such travel time could reduce their capacity to provide services. Furthermore, the primary task of school psychologists, despite efforts towards integrating response-to-intervention, is still to conduct psychoeducational assessments for determination of special education eligibility. Other barriers may also include commonly stated issues around limited resources and financial support (Hicks et al., 2014). Any or all of these could lead

towards school based providers (here, primarily school psychologists) being unable to implement evidence based practices.

Finally, the hypothesis may not have been supported due to how implementation of EBPs was measured. This was measured through one question in the demographics section phrased as, "Average number of hours per week in which you implement Evidence Based Practices". There were many risks to the validity of this question as participants: could have their own personal definition of EBPs, might only consider direct services into their calculations and leave out their indirect services (many participants asked during the survey whether they should include indirect services), and their responses could be impacted by effects of memory and response bias. The best measure of use of EBPs would be through direct observation of services being delivered, especially including measures of fidelity to intervention.

Limitations of this Study

As is true with all studies, this dissertation had its limitations. These limitations included issues around sampling, instrumentation, and method. This next section will expand and discuss these shortcomings as well as provide considerations for research on this topic going forward.

The first topic of limitations focuses on the sample of the study. Some directors noted that they could not afford to take time out of their meeting schedule or their staffs' schedules to complete the 15-minute survey. The sample therefore became a sample of convenience and not a true randomized sample. As a result, there was a disproportionate amount of community providers and school psychologists, while there were very few guidance counselors sampled. Should this research be conducted again on a district scale,

it may lend towards a more randomized and representative sample if a researcher were to either email the survey to all the behavioral health providers in the district or attempt to go to every school, in person, and seek participation.

As this sample was district specific, the findings cannot be generalized to school districts throughout the state or the U.S. A more representative state or national sample may have produced factor structures with the EBPAS-15 and EBPAS-50 that more closely resembled those of Aarons' studies (e.g. Aarons, 2004, Aarons et. al, 2010; Aarons et al., 2012a). It may be plausible to obtain such samples by accessing email lists from national organizations of school psychology (NASP and APA Division 16), guidance counseling (ASCA), social work (NASW), and so forth.

The next topic of limitations focuses on the survey instrument itself. With regards to the demographic section of the survey, there were several issues. First, the question around hire status may have been confusing to students as they are not technically hired by their practicum or internship site. Generally, in Massachusetts, students in the behavioral health professions do not receive payment for their practica or internship experiences. This may have led to some errors in response. An additional option "unpaid intern" could have been an option. Also, some expressed concern around the item that inquired about one's race. As one participant wisely indicated, race is a social construct and subject to multiple interpretations. If each race cannot be concisely defined, then any differences by race would be arbitrary. Though this question may be more for the purpose of identifying whether the sample is representative of the population, it may be inappropriate to make any comparisons of EBPAS or scale scores based on race. However, based on available research, it may be more appropriate to add

items to the EBPAS related to how one feels about the current availability of evidence based practices for clients who happen to be minorities (of multiple levels).

Finally, in order to assess the K-A-P process, there would need to be an assessment of provider's knowledge attached to this study. During the process of the literature review, few knowledge assessments were identified. However, there was one tool used by Nakamura et al. (2011). When reviewed for consideration of inclusion into this study, there was question as to whether the tool had face validity (e.g. practices that are presently known as evidence based were not considered as such within the tool). It may be necessary to develop an updated, school-based service related survey tool to assess school-based providers' knowledge of EBPs.

Methodologically, the study could have been enriched if it were paired with focus groups or interviews. Such qualitative methods could provide greater context for the results of the study and to possibly help to identify new, school-provider focused items for a re-iteration of the EBPAS tool.

Research Implications

This study tested the appropriateness of the EBPAS-15 and EBPAS-50 tools with a sample of school-based behavioral health providers working within the Boston Public Schools. With this sample, the four and twelve factor structures did not hold up as they had with samples of community providers from San Diego and nationally. This suggests that there may be something unique to being a provider from the Boston area and/or a school based provider. This warrants further investigation to qualify and quantify what these differences are and how these variables can be factored into an attitudes scale, such as the EBPAS. The logical next questions, prompted by this dissertation are:

- How are school based mental health providers in Boston different than community based providers nationally?
- Is there something unique about practicing in an urban context, or specifically within the Boston area?
- Does it have to do with the context of working in a school?
- Does it have to do with the type of clinicians who prefer to work within a school context?

Exploration of these questions will be helpful to the Boston Public Schools in gaining a true pulse on the culture, the perspectives, and the needs of the providers who serve their children. For instance, in Boston, providers' attitudes towards EBPs may be more impacted by high caseloads, competing demands (testing versus service delivery), little available time for planning, frequent cycling of new initiatives, frequent red tape, resistance/hesitance of principals, role and financial limitations. Looking at prior research on barriers to the use of EBPs, such items may include themes around: availability of technical assistance, capacity for monitoring impact, availability of staffing and equipment, availability of time, level of parent engagement and follow-through, buy in from administrators and teachers, readiness of the school, assistance from administrators to overcome barriers, clinician's perceived efficacy, commitment to implement an intervention, etc. (Bambara et al., 2012; Biedas & Kendall, 2010; Cawood, 2010; Durlak & Dupre, 2008; Fixsen et al., 2005; Forman et al., 2012; Greenhalgh et al., 2004; Hicks et al., 2014; Langley et al., 2010; Rogers, 2003).

Considering how the items clustered together into one large factor, largely focused on fit between client, clinician, and therapeutic environment may suggest that this population may see this congruence (of treatment to client, clinician, and context) as being an essential component to maintaining a positive attitude towards evidence based practices. This would fit with Roger's (1995) concept of *Compatibility*. Furthermore, given how the factor of Requirements maintained its integrity, future attitudinal research with school based populations should maintain this factor. Qualitative methods such as interviews and focus groups with Boston providers will be helpful in identifying their specific viewpoints. Such information can be used to feed into a more city-specific attitudes scale.

The first and second hypotheses tested were related to how professional status and employment status might impact attitudes towards evidence based practice. Based on this sample it appears that graduate students and school-hired professionals hold more positive attitudes towards evidence based practice than professionals and non-school hired professionals. Also, school-hired professionals indicated that they were more likely to use an EBP if required to do so. The logical next steps are to identify why these differences exist and whether they are meaningful. Could these difference be due to factors such as training, knowledge, efficacy, exposure, or peer expectations? Or could it be something else or a combination of factors? Further exploration into the "why" can help advance the EBPAS tool and broaden its applications.

A potential variable that could contribute to participants' attitudes towards evidence based practice could be in how they are defined. There are multiple definitions of EBPs and the one used for this study may have resonated more strongly with some

participants than others. Given that there were multiple professions and disciplines involved in this study, it is possible that regardless of how EBPs were defined for this particular study, that each participant may have a different conceptualization of EBP in mind while completing the survey. This is possible as there are multiple definitions of EBP, even within professions (i.e. APA Divisions). Furthermore, each participant may have his or her own conceptualization of what constitutes "evidence" which has led to major debates as to the core concept of EBPs. Until a universal definition of EBP can be identified, attitudinal scales such as these will only be measuring perceptions of a loose concept, which will have little predictive quality. For future research on school-based populations, a common definition of EBP needs to be identified.

Despite having more positive attitudes towards EBPs, students and school-hired professionals provided fewer overall hours of EBPs and fewer hours of EBPs per hour they were available in the school (Table 11). This seems counterintuitive from the perspective of K-A-P; however systemic barriers may be at play. Ongoing research focused on diffusion of innovation may shed some light on this conundrum as it is possible that barriers of training, support, demands, and resources may be impeding these populations from following through to implementation (Aarons et al, 2012b; Biedas & Kendall, 2010; Duclak & Dupre, 2008; Fixsen et al, 2005; Greenhalgh et al., 2004; Hicks, Shahidullah, Carlson, & Palejawala, 2014; Rogers, 2003). Beyond this, attitudes may also have more nuanced impact on practice, such as practitioners' fidelity to design, genuine investment into the intervention, and overall outcomes (Stirman et al., 2015). These may be better and more meaningful measures of practice than overall hours of implementation.

The lack of direct measures of practice may have been the cause for the third hypothesis not being supported. The third hypothesis focused on there being a relationship between attitudes towards EBPs and reported practice of EBPs. There was no correlation found using the EBPAS-15 Total score (and the Requirements score) and the reported weekly hours of EBP use. There may be multiple tool related factors that led to this result that could be improved upon, including the scaling, the definition of practice, the measure of practice, and the face validity of the tool. The tool itself uses a five-point scale. It is possible that this scale may not be sensitive enough to detect the nuances of attitudes. A seven or nine-point scale may provide more specificity. The definition of practice itself within this particular survey may not have been clear and may not have captured all the direct and indirect services. Participants frequently asked if the researcher meant to ask about both direct and indirect services (to which the researcher would reply "yes"). However, this researcher was not always present when the survey was provided and participants may not have heard his response when it was made. Furthermore, the school psychologists in the Boston area, whose time is mostly taken in psychoeducational testing, may not have considered their testing to be an evidence based practice. This leads to the question as to whether such testing is evidence based or whether school psychologists' time should be used more strategically (Burns, 2016). Clarifying the question around average use of EBPs and how it includes direct and indirect services, may help to navigate these issues. For more detail, it may be helpful to separate out these questions (especially providing a specific item regarding volume of psychological assessments). Regardless, such reports on a survey may be subject to issues around poor memory, miscalculation, and response biases. The only true measure

of use of EBPs would be direct observations of the participant in his or her practice. A slightly less direct measure might be through chart reviews, akin to how insurance companies review clinician's notes and billing to ensure proper treatment and coding. However, school providers are not required to maintain progress notes in the same way that insurance-billing clinicians are. This would require new standards of documentation for school-based providers.

Despite holding more positive attitudes towards EBPs, school hired providers and students provided fewer reported weekly hours of EBPs. As noted before, further investigation needs to be focused on the barriers of implementation as well as on the fidelity to implementation (which may be a better measure of practice). With regards to barriers, questions assessing potential barriers (of support, time, space, money, training, efficacy, knowledge, etc.) could be added to the demographic questions of an EBPAS survey to help identify why this lack of correlation may exist.

Future research on the attitudes towards evidence based practices of school based providers should also expand beyond traditional therapist's roles. As indicated by the APA Task force on Evidence Based Practice with Children and Adolescents (2008), behavioral health service delivery may not come from those who are considered the traditional providers of behavioral health services. Considering the volume of time at which teachers, nurses, principals and vice principals spend with students (especially in comparison to school psychologists, therapists, and guidance counselors) and the volume of behaviorally related interventions they provide throughout the day, their perspectives are critical to understanding the faith and fidelity being put into the implementation of EBPs in schools. One could argue that it may be far more impactful to assess the

knowledge, attitudes, and practice of these populations than the traditional providers as these populations have the greatest opportunity for impact on students (Franklin, Kim, Ryan, Kelly, & Montgomery, 2012). These populations provide the Tier I, universal, behavioral health interventions (knowingly or not). Their investment into EBPs will be crucial to meeting the behavioral health needs of students.

Future Practice

The clustering of the EBPAS-15 items through this study's exploratory factor analysis suggests that something very important may be at play with providers' attitudes towards EBPs. The clustering suggested a theme of congruence, between the EBP and the client, the provider, and the therapeutic context (e.g. school), which seems to fit nicely with Roger's (1995) concept of "compatibility". There is already research indicating that providers' race can impact attitudes towards EBPs (e.g. Aarons et al., 2010; Aarons et al., 2012a) as well as data that providers are concerned that EBPs do not appear appropriate for their specific population due to lack of research on children of color, comorbid behavioral health issues, and use in non-clinical environments (e.g. Addis & Krasnow, 2000; Addis et al., 1999; Baumann et al., 2006: Nelson & Steele, 2008; Nelson et al., 2006; Stewart et al., 2012; Toth & Manly, 2011; Walrath et al., 2006; Westen et al., 2005). It may be necessary to make more easily accessible to providers the practices that have proven effective for urban youth (via reference guides, trainings, search engines) while continuing to focus research efforts on evaluating potential practical evidence based practices for this population.

Knowing that there are differences in attitudes towards evidence based practices provides the fields of behavioral health, and education, with opportunities for intervention. Given that professionals and non-school hired practitioners indicate less positive attitudes towards evidence based practice (and that non-school employees are less likely to implement them if required to do so), there may be need to incentivize the use of EBPs. This may come in the form of: administrators providing more access of schools and students to the providers who have established reputations for using EBPs, insurance companies providing higher rates of reimbursement for use of EBPs, or finding ways to share the cost of EBP implementation (in comparison to "standard care"; Garland et al., 2013; Parks, 2007; Stewart et al., 2015).

Discrepancies between these subgroups call to the need for bolstered resources in school districts. This data suggests that graduate students may be uniquely poised to provide much needed capacity for evidence based treatment to urban youth. The barriers of time are necessary in order to protect their educational process. Yet, graduate students' enthusiasm for EBPs may be thwarted by less appreciative supervisors, necessitating intervention (Brooks, Patterson, & McKerinan, 2012). These students are an especially vulnerable, yet strongly needed resource for the diffusion of evidence based interventions. They hold the state-of-the-art knowledge about EBPs, however they may have little experience in implementing them. Their supervisors, who may hold even less knowledge of EBPs might not support intern and practicum students with skills they do not feel comfortable teaching or overseeing. Students' knowledge and emerging skills need to be encouraged by supervisors who either a) are willing to learn alongside students or b) are EBP-savvy themselves. Interventions to address these needs may include

providing professionals (especially supervisors) and non-school hired professionals with trainings and supportive peer learning communities focused around the benefits and practical use of EBPs. University-school-agency partnerships may help to provide the intellectual, financial, and practical supports needed to improve professionals and non-school hired clinicians' attitudes towards EBPs (Miller, Krusky, Franzen, Cochran, & Zimmerman, 2013; Owens et al.2013). Furthermore, such collaborative relationships can help to align university and community-agency training expectations to urban school needs.

These results suggest that school-hired behavioral health staff may be more optimally poised to provide EBPs to students, if allowed the time and opportunity to do so. The majority of the school hired professionals were school psychologists. Despite holding more positive attitudes towards evidence based practices, they provided fewer hours (especially per hour available at a school) of evidence based practices than those who were not hired by the school. If more positive attitudes are likely to lead towards more appropriate use of EBPs, then the barriers to school psychologists providing direct and indirect behavioral services, such as lack of time, lack of resources, and financial constraints need to be addressed (Hicks, Shahidullah, Carlson, & Palejwala, 2014). Shifting of school systems and cultures away from the traditional "test-refer" model towards that of Response-to-Intervention (RTI) shows promise in freeing school hired providers time from mandated (and often unnecessary) services towards flexibly targeted short term assessments and interventions. Reduction in caseload and tasks, as well as collaborative resourcing with universities and hospitals, may help to alleviate some of these pressures (Bambara et al., 2012; Castillo & Curtis, 2014; Maki et al., submitted for

publication). Furthermore, school psychologists cannot currently bill insurances in many states, reducing their capacity to provide direct services. This may mean changing such policies at the state level. However, if community providers have more current capacity to provide the direct and indirect service needs, then it may be necessary to focus energies on reducing the barriers (e.g. funding, access, and attitudes) to more community providers coming into the schools and providing evidence based services (especially Tier 1/preventative services). This would require identifying alternative funding streams, such as grants, or expanding insurance reimbursement strategies to include preventative behavioral health services. Such shifts could allow systems like BPS to maximize on the capacity that they have hold within the system. Likely, in order to provide evidence based multi tiered systems of support to meet the needs of urban youth, all of the above strategies will be necessary.

Methodological Implications

In many ways this study replicates prior research using the EBPAS-15 and EBPAS-50. The most unique aspect of this study was that the target population was that of school based behavioral health providers, which is a population that had not yet been researched for the purpose of testing the EBPAS tools or comparing the attitudes within the subgroups (students, professionals, school-hired, and non-school hired practitioners). Based on the results of this study, further research with this population is necessary in order to develop an appropriate tool for measuring school based behavioral health providers' attitudes towards EBPs.

Summary and Conclusions

The overarching purpose of this dissertation was to assess the attitudes of school based providers towards Evidence Based Practices as a step towards meeting the complex and copious behavioral health needs of urban youth in Boston. There were multiple purposes for this dissertation study. The first task was to validate a potential tool for assessing the attitudes of school based behavioral health providers towards evidence based practices. The second task was to use the tool to examine the attitudes of school-based providers and to compare these groups depending on their employment status and their professional status. The third task was to see if there was a connection between attitudes and practice as posited by the Knowledge-Attitudes-Practice theory (Rogers, 2003). The results of this study suggested that:

- The EBPAS-50 and EBPAS-15 survey tools do not behave in the same way with school based providers as they do with providers who work outside of schools (in mental health clinics, universities, and hospitals),
- School based behavioral health providers who work within the Boston Public Schools agree with evidence based practices "to a great extent",
- Graduate students undergoing their practicum or internship year within the Boston Public Schools presented with more positive attitudes towards evidence based practices than hired professionals.
- Behavioral health staff hired by the Boston Public Schools presented with more positive attitudes towards evidence based practices than those who were hired by outside agencies,

- And there is no correlation between attitudes towards evidence based practices and reported use of EBPs by school-based behavioral health providers within the Boston Public Schools.

More research will be needed in order to identify a tool that is appropriate to measure the attitudes of school-based providers and to understand the causes for the differences amongst them. Future survey tools may ideally include items related to self efficacy (Aarons, 2005; Rodriguez-Soto et al., 2015), normative and subjective norms (Bonetti et al., 2005; Rodriguez-Soto, 2015), and the organizational contexts and how it supports the use of EBPs (Aarons et al., 2012; Rodriguez-Soto, 2015). Future tools may pool from the wealth of research focused on diffusion of innovation, coming from a more ecological framework to explain how systems intersect at the provider level (Bronfenbrenner, 1989) In order to better assess the practice piece of the K-A-P process, future research should look at direct measures of knowledge and practice, including the choice process of identifying an intervention to meet a child's need and fidelity to the design of the intervention (e.g. Stirman et al., 2015). Such tools may provide more powerful, correlational and causal links between attitudes and action.

Recommendations

Recommendations for the Boston Public Schools, based on this data include:

- Use the EBPAS-15 cautiously as an assessment of attitudes towards EBPs until an updated version, validated on school providers, is developed,
- Identify and/or aid in the development of EBPs that are compatible with youth and practitioners' needs and environment.

- Maintain investment in relationship with local universities for continued research and intervention support
- Develop systems for sustaining the use of EBPs, including the use of peer learning communities and train-the-trainer models
- Instill systems for monitoring the use, and fidelity to use, of EBPs with students
- Continue to support efforts towards reducing the barriers of school hired providers being able to provide EBPs (e.g. caseload, psychoeducational evaluations, multiple assigned schools)
- Advocate for change in policy around licensing and billing for school psychologists and community providers, so that they may be able to open new funding streams and bill for the full spectrum of Tiered services (including especially Tier I/universal/preventative services).

REFERENCES

Aarons, G.A. (2004) Mental health provider attitudes toward adoption of evidence based practice: The evidence based practice attitude scale (EBPAS). *Mental Health Services Research*, 6, 61-74. doi: 10.1023/B:MHSR.0000024351.12294.65

Aarons, G.A. (2005) Measuring provider attitudes towards evidence-based practice: Consideration of organizational context and individual differences. *Child and Adolescent Psychiatric Clinics of North America*, 14(2)255 – 271. doi: 10.1016/j.chc.2004.04.008

Aarons, G.A., Cafri, G., Lugo, L., Sawitzky, A. (2012a). Expanding the domains of attitudes towards evidence based practice: The evidence based practice attitude scale-50. *Administration and Policy in Mental Health*, 39, 331-340. doi: 10.1007/s10488-010-0302-3

Aarons, G.A., Fettes, D.L., Flores, L.E., & Sommerfeld, D.H. (2009) Evidence based practice implementation and staff emotional exhaustion in children's services. *Behavior Research and Therapy,* 47, 954-960. doi: 10.1016/jbrat.2009.07.006

Aarons, G.A., Glisson, C., Hoagwood, K., Kelleher, K., Landsverk, J., & Cafri, G. (2010). Psychometric properties and United States national norms of the Evidence-Based Practice Attitude Scale (EBPAS). *Psychological Assessment*, 22(2), 356-365. Retrieved from: http://www.apa.org/pubs/journals/pas/

Aarons, G.A., Glisson, C., Green, P., Hoagwood, K., Kelleher, K.J., & Landsverk, J.A. (2012b). The organizational social context of mental health services and clinician attitudes toward evidence-based practice: A United States national study. *Implementation Science*, 7(1): 56. doi:10.1186/1748-5908-7-56.

Aarons, G.A., & Palinkas, L.A. (2007). Implementation of evidence based practice in child welfare: Service provider perspectives. *Administration and policy in Mental Health & Mental Health Services Research*, 34, 411-4119. doi: 10.1007/s10488-007-0121-3.

Aarons, G.A., & Sawatzky, A.C. (2006). Organizational culture and climate and mental health provider attitudes toward evidence based practice. *Psychological Services*, 3(1): 61 – 72. doi:10.1186/1748-5908-7-56

Addis, M.E., & Krasnow, A.D. (2000). A national survey of practicing psychologists' attitudes toward psychotherapy treatment manuals. *Journal of Consulting and Clinical Psychology*, 68, 331-339. doi: 10.1037/0022-006X.68.2.331.

Addis, M.E., Wade, W.A., & Hatgis, C. (1999). Barriers to the dissemination of evidence-based practices: Addressing practitioners concerns about manual-based psychotherapies. *Clinical Psychology: Science and Practice*, 6(4), 430 – 441. doi: 10.1093/clipsy/6.4.430

Ajzen, Icek (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes*, 50, 179 – 211. doi: 10.1016/0749-5978(91)90020-T

American Psychological Association (1995). *Template for developing guidelines: Interventions for mental disorders and psychosocial aspects of physical disorders*. Washington, DC: Author.

American Psychological Association (2006). APA Presidential Task Force on Evidence-Based Practice: Evidence Based Practice in Psychology. *American Psychologist*, 6(4), 271-285. doi: 10.1037/0003-066X.61.4.271.

APA Task Force on Evidence-Based Practice with Children and Adolescents (2008). *Disseminating evidence-based practice for children and adolescents: a systems approach to enhancing care*. Washington, DC: American Psychological Association.

Anakwenz, U., & Zuberi, D. (2013). Mental health and poverty in the inner city. *Health & Social Work*, 38(3), 147 – 157, doi: 10.1093/hsw/hlt013

Anderson, N.R., & West, M.A. (1998). Measuring climate for work group innovation: Development and validation of the team climate inventory. *Journal of Organizational Behavior*, 19, 235 – 258. doi: 10.1002/(SICI)1099-1379(199805)19:3<235::AID-JOB837>3.0.CO;2-C

Atkins, M.S., Frazier, S. L., Adil, J., & Talbott, E. (2003). School based mental health services in urban communities. In M. D. Weist, S.W. Evens, & N.A. Lever (Eds.), *Handbook of school mental health: Advancing practice and research* (pp. 165 – 178). New York, NY: Plenum Press. doi: 10.1007/978-0-387-73313-5

Bambara, L. M., Goh, A., Kern, L., & Caskie, G. (2012). Perceived barriers and enablers to implementing individualized positive behavior interventions and supports in school settings. *Journal of Positive Behavior Interventions*, 14(4), 228 – 240. doi: 10.1177/1098300712437219

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84, 191–215. doi: 10.1037/0033-295X.84.2.191

Baumann, B.L., Kolko, D.J., Collins, K. & Herschell, A.D. (2006). Understanding practitioners' characteristics and perspectives prior to the dissemination of an evidence-based intervention. *Child Abuse and Neglect*, 30(7), 771 – 787. doi: 10.1016/j.chiabu.2006.01.002.

Beavers, A. S., Lounsbury, J. W., Richards, J. K., Huck, S. W., Skolits, G. J., & Esquivel, S. L. (2013). Practical considerations for using exploratory factor analysis in educational research. *Practical assessment, research & evaluation*, *18*(6), 1-13.

Biedas, R. S., & Kendall, P.C. (2010). Training therapists in evidence based practice: A critical review of studies from a systems-contextual perspective, *Clinical Psychology (New York),* 17(1), 1-30. doi: 10.1111/j.1468-2850.2009.01187.x.

Birleson, P. (1999). Turning child and adolescent mental-health services into learning organizations. *Clinical Child Psychology and Psychiatry*, 4, 265 – 274. doi: 10.1177/1359104599004002011

Blackorby, J., & Cameto, R. (2004). Changes in school engagement and academic performance of students with disabilities. *Wave 1 Wave 2 Overview*. Menlo Park, CA: SRI International.

Blackorby, J., Cohorst, M., Garza, N., & Guzman, A. (2003). The academic performance of secondary school students with disabilities. *The achievements of youth with disabilities during secondary school*. Menlo Park, CA: SRI International.

Bohart, A., O'Hara, M., & Leitner, L. (1998). Empirically violated treatments: Disenfranchisement of Humanistic and other psychotherapies. *Psychotherapy Research*, 8(2), 141-157. doi: 10.1080/10503309812331332277

Bonetti, D., Eccles, M., Johnston, M., Steen, N., Grimshaw, J., Baker, R., … Pitts, N. (2005). Guiding the design and selection of interventions to influence the implementation of evidence-based practice: an experimental simulation of a complex intervention trial. *Social Science & Medicine*, 60(9), 2135–2147. doi:10.1016/j.socscimed.2004.08.072

Bookman-Frazee, L., Garland, A.F., Taylor, R., & Zoffness, R. (2009). Therapists' attitudes towards psychotherapeutic strategies in community-based psychotherapy with children with disruptive behavior problems. *Administration and Policy in Mental Health and Mental Health Services*, 36(1), 1-12. doi: 10.1007/s10488-008-0195-6.

Boston Area School Based Behavioral Health Collaborative (2014-2015). Overview of school-based behavioral health programs in partnership with the Boston Public Schools. Retrieved from: http://cbhmboston.com/school-based-mental-health-collaborative/

Boston Public Schools Communications Office (2015, June 10). Boston Public Schools at a glance. Retrieved from: http://www.bostonpublicschools.org/cms/lib07/MA01906464/Centricity/Domain/4/BPS%20at%20a%20Glance%2015-1109.pdf

Breslau, J., Lane, M., Sampson, N., & Kessler, R.C. (2008). Mental disorders and subsequent educational attainment in a US national sample. *Journal of Psychiatric Research*, 42, 708 – 716. doi:10.1016/j.jpsychires.2008.01.016

Bronfenbrenner, U. (1989). Ecological systems theory. In R. Vasta (Ed.), Annals of child development (vol 6, pp.187 – 249). Greenwich, CT: JAI Press.

Brooks, C. T., Patterson, D. A., & McKiernan, P. M. (2012). Group Supervision Attitudes: Supervisory Practices Fostering Resistance to Adoption of Evidence-Based Practices. *Qualitative Report (Online)*, *17*(1), 191–199.

Burnett-Zeigler, I., & Lyons, J. S. (2012). Youth characteristics associated with intensity of service use in a school-based mental health intervention. *Journal of Child and Family Studies*, *21*(6), 963-972.

Burns, M. (2016). Effect of cognitive processing assessments and interventions on academic outcomes: Can 200 studies be wrong? *Communiqué*, 44(5)

Burns, B.J., Costello, E.J., Angold, A., Tweed, D., Stangl, D., Farmer, E.M., & Erkanli, A. (1995). Children's mental health service use across service sectors. *Health Affairs*, 14(3), 147 – 59. doi: 10.1377/hlthaff.14.3.147

Candel, M.J.J.M., & Pennings, J.M.E. (1999). Attitude-based models for binary choices: A test for choices involving an innovation. *Journal of Economic Psychology*, 20, 547 – 569. doi: 10.1016/S0167-4870(99)00024-0

Cauce, A.M., Stewart, A., Rodriguez, M.D., Cochran, B., Ginzler, J. (2003). Overcoming the odds? Adolescent development in the context of urban poverty. In S. S. Luthar (Eds), *Resilience and Vulnerability: Adaptation in the Context of Childhood Adversities* (pp. 343 – 363) Cambridge, UK: Cambridge University Press

Cawood, Natalie Diane (2010). Barriers to the use of evidence-supported programs to address school violence. *Children & Schools*, 32(3), 143 – 149. doi: 10.1093/cs/32.3.143

Center for Disease Control and Prevention. (2014, May 13). Prevalence of individual adverse childhood experiences. Retrieved from: http://www.cdc.gov/violenceprevention/acestudy/prevalence.html

Center for Disease Control and Prevention (2015, December 21). National Health and Nutrition Examination Survey. Retrieved from: http://www.cdc.gov/nchs/nhanes.htm

Chaffin, M., & Friedrich, B.. (2004). Evidence-based treatments in child abuse and neglect. *Children and Youth Services Review*, 26, 1097 – 1113. doi: 10.1016/j.childyouth.2004.08.008.

Chambless, D.L., & Hollon, S.D. (1998). Defining empirically supported therapies. *Journal of Counseling and Clinical Psychology*, 66(1), 7-18. Retrieved from http://psycnet.apa.org/journals/ccp/

Chapman, D.P., Whitfield, C.L., Felitti, V.J., Dube, S.R., Edwards, V.J., & Anda, R.F. (2004). Adverse childhood experiences and the risk of depressive disorders in adulthood. *Journal of Affective Disorders*, 82, 217 – 225, doi: http://dx.doi.org/10.1016/j.jad.2003.12.013

Castillo & Curtis (2014). Best practices in systems level change. In P. L. Harrison & A. Thomas (Eds.), *Best practices in school psychology: Systems level services* (pp.11 – 28). Bethesda, MD: National Association of School Psychologists.

Children's Defense Fund. (2011). Portrait of inequality 2011: Black children in America. Retrieved from http://www.childrensdefense.org/programs-campaigns/black-community-crusade-for-childrenII/bccc-assets/portrait-of-inequality.pdf

Choutka, C.M., Doloughty, P.T., & Zirkel, P.A. (2004). The "discrete trials" of applied behavioral analysis for children with autism: Outcome-related factors in the case law. *The Journal of Special Education*, 38(2) 95 – 103.

Cialdini, R. B., Bator, R. J., & Guadagno, R.E. (1999). Normative influences in organizations. In L. L. Thompson, J. M. Levine & D. M. Messick (Eds.)., *Shared cognition in organizations: The management of knowledge* (pp. 195 – 211). Mahwah, NJ: Erlbaum.

Codding, R. S., Feinberg, A. B., Dunn, E. K., & Pace, G. M. (2005). Effects of Immediate Performance Feedback On Implementation Of Behavior Support Plans. *Journal of Applied Behavior Analysis*, *38*(2), 205–219. http://doi.org/10.1901/jaba.2005.98-04

Costello, A.B., & Osborne, J.W. (2005). Best practice in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical Assessment, Research, & Evaluation*, 10(7), 1 – 9.

Council of the Great City Schools. (2003) *2002-2003 Annual report*. Washington, DC: Author

Crits-Chistoph, P., Wilson, G.T., &Hollon, S.D. (2005). Empirically supported psychotherapies: Comment on Westen, Novotny, and Thompson-Brenner (2004). *Psychological Bulletin*, 131(5), 412-417. Retrieved from http://www.apa.org/pubs/journals/bul/

DiGEnnaro, F.D., Martens, B.K., Kleinmann, A.E. (2007). A comparison of performance feedback procedures on teachers' treatment implementation integrity and students' inappropriate behavior in special education classrooms. *Journal of Applied Behavior Analysis*, 40, 447 – 461.

DiGennaro, F.D., Martens, B.K., & McIntyre, L.L. (2005). Increasing treatment integrity through negative reinforcement: Effects on teacher and student behavior. *School Psychology Review*, 34, 220 – 231.

Doll, Beth (1996). Prevalence of psychiatric disorders in children and youth: An agenda for advocacy by school psychology. *School Psychology Quarterly*, 11(1), 20-47. Retrieved from http://www.apa.org/pubs/journals/spq/

Duchnowski, A. J., Kutash, J., & Friedman, R.M. (2002). Community-based interventions in a systems of care and outcomes framework. In B.J. Burns & K. Hoagwood (Eds.), *Community treatment for youth: Evidence-based interventions for severe emotional and behavioral disorders* (pp. 16-37). New York: Oxford University Press. doi: 10.1093/acprof:oso/9780195134575.001.0001

Durlak, J.A., & Dupre, E.P. (2008). Implementation matters: A review of research on the influence of implementation on program outcomes and the factors affecting implementation. *American Journal of Community Psychology*, 41, 327 – 350. doi: 10.1007/s10464-008-9165-0

Durlak, J.A., Weissberg, R.P., Dymnicki, A.B., Taylor, R.D., & Schellinger, K.B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development*, 82(1), 405 – 432, doi: 10.1111/j.1467-8624.2010.01564.x

Elias, M.J., & Haynes, N.M. (2008). Social competence, social support, and academic achievement in minority, low-income, urban elementary school children. *School Psychology Quarterly*, 23(4), 474 – 495. doi:10.1037/1045-3830.23.4.474

Ennett, S. T., Ringwalt, C. L., Thorne, J., Rohrbach, L. A., Vincus, A., Simons-Rudolph, A., et al. (2003). A comparison of current practice in school-based substance use prevention programs with meta-analysis findings. *Prevention Science*, 4, 1-14. Retrieved from http://link.springer.com/journal/11121

Fabrigar, L. R., Wegener, D. T., MacCallum, R. C., & Strahan, E. J. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychological Methods*, 4(3), 272–299. doi:10.1037/1082-989x.4.3.272

Finley, E. P., Garcia, H. A., Ketchum, N. S., McGeary, D. D., McGeary, C. A., Stirman, S. W., & Peterson, A. L. (2015). Utilization of evidence-based psychotherapies in Veterans Affairs posttraumatic stress disorder outpatient clinics. *Psychological services*, *12*(1), 73.

Fiol, C.M., & Lyles, M.A. (1985). Organizational learning. *Academy of Management Review*, 10, 803 – 813. Retrieved from http://aom.org/AMR/

Fixsen, D. L., Naoom, S. F., Blasé, K, A., Friedman, R. M., & Wallace, F. (2005). *Implementation research: A synthesis of the literature*. Tampa, FL: University of South Florida, Louis de la Parte Florida Mental Health Institute, The National Implementation Research Network.

Forman, S. G., Fagley, N.S., Chu, B.C., & Walkup, J.T. (2012). Factors influencing school psychologists' "Willingness to Implement" evidence-based interventions. *School Mental Health*, 4, 207 – 218. doi: 10.1007/s12310-012-9083-z.

Forman, S.G., Olin, S.S., Hoagwood, K.E., Crowe, M., & Saka, N. (2009). Evidence-based interventions in schools: Developers' views of implementation barriers and facilitators. *School Mental Health*, 1, 26 – 36. doi: 10.1007/s12310-008-9002-5

Forman, S. G., Shapiro, E. S., Codding, R. S., Gonzales, J. E., Reddy, L. A., Rosenfield, S. A., ... & Stoiber, K. C. (2013). Implementation science and school psychology. *School Psychology Quarterly*, *28*(2), 77.

Foulger, D. and other participants. (September 18, 2015). Statistical Methods. MediaSpaceWiki. Retrieved on from http://evolutionarymedia.com/wiki.htm?StatisticalMethods

Framback, R. T., & Schillewaert, N. (2002). Organizational innovation adoption: A multi-level framework of determinants and opportunities for future research. *Journal of Business Research*, 55, 163 – 176. doi: 10.1016/S0148-2963(00)00152-1

Franklin, C. G., Kim, J. S., Ryan, T. N., Kelly, M. S., & Montgomery, K. L. (2012). Teacher involvement in school mental health interventions: A systematic review. *Children and Youth Services Review*, *34*(5), 973-982.

Garland, A.F., Kruse, M., & Aarons, G.A. (2003). Clinicians and outcome measurement: What's the use? *Journal of Behavioral and Health Services Research*, 30, 393-405. doi: 10.1007/BF02287427

Garrison, E. G., Roy, I.S., & Azar, V. (1999) Responding to the mental health needs of Latino children and families through school-based services. *Clinical Psychology Review*, 19, 199 – 219. doi: 10.1016/S0272-7358(98)00070-1

Garvin, D.A. (1993). Building a learning organization. *Harvard Business Review*, 71, 78 – 91. Retrieved from http://hbr.org/

George, D., & Mallery, P. (2003). SPSS for Windows step by step: A simple guide and reference. 11.0 update (4th ed.). Boston: Allyn & Bacon.

Ghasemi, A., & Zahediasl, S. (2012). Normality Tests for Statistical Analysis: A Guide for Non-Statisticians. *International Journal of Endocrinology and Metabolism*, 10(2), 486–489. doi:10.5812/ijem.3505

Gilliam, W.S. (2005). Prekindergarteners left behind: Expulsion rates in state prekindergarten programs. *FCD Policy Briefs Series 3*. New York, NY: Foundation for Child Development. Retrieved from http://www.plan4preschool.org/documents/pk-expulsion.pdf

Glisson, C. (2002). The organizational context of children's mental health services. *Clinical Child and Family Psychology Review*, 5, 233 – 253. Retrieved from http://www.springer.com/psychology/child+%26+school+psychology/journal/10567

Greenhalgh, T., Robert, G., McFarlane, F., Bate, P. & Kyriakidou, O. (2004). Diffusion of innovations in service organizations: Systematic review and recommendations. *The Milbank Quarterly*, 82(4), 581 – 629. Retrieved from: http://onlinelibrary.wiley.com/journal/10.1111/%28ISSN%291468-0009

Gottfredson, D. C., & Gottfredson, G. D. (2002). Quality of school-based prevention programs: Results from a national survey. *Journal of Research in Crime and Delinquency*, 39, 3-36. doi: 10.1177/002242780203900101

Hallfors, D., & Godette, D.. (2002). Will the 'principles of effectiveness' improve prevention practice? Early findings from a diffusion study. *Health Education Research: Theory & Practice*, 17(4), 461 – 470. doi: 10.1093/her/17.4.461

Hanley, S., Ringwalt, C., Ennett, S.T., Vincus, A.A., Bowling, M.J., Haws, S.W., Rorbach, L.A.. (2010). The prevalence of evidence-based substance use prevention curricula in the nations elementary schools. *Journal of Drug Education*, 40(1), 51 – 60. doi: 10.2190/DE.40.1.d

Hanchon, T.A., & Allen, R.A. (2013). Identifying students with emotional disturbance: School psychologists' practices and perceptions. *Psychology in Schools,* Vol 50(2), 193 – 208. doi: 10.1002/pits.21668

Health Care Financing & Organization. (2004, October). *Mental health care disparities among youth vary by state* (Findings Brief Vol. VIII, No. 6). Washington, DC: Author.

Heartland Area Education Agency 11. (2005). *Program manual for special education*. Johnston, IA; Author.

Hicks, T.B., Shahidullah, J. D., Carlson, J.S., & Palejwala, M.H. (2014). Nationally certified school psychologists' use and reported barriers to using evidence-based interventions in schools: The influence of graduate program training and education. *School Psychology Quarterly*, Advanced online publication. http://dx.doi.org/10.1037/spq0000059.

Hoagwood, K., & Olin, S. S. (2002). The NIMH blueprint for change report: Research priorities in child and adolescent mental health. *Journal of the American Academy of Child and Adolescent Psychiatry*, 41, 760 – 767. doi: 10.1097/00004583-200207000-00006

Holzer, P., Lweiv, G., Bromfield, L., & Arney, F. (2007). *Research use in the Australian child welfare sector*. Australian Government. Australian Institute of Family Studies, National Child Protection Clearinghouse. Retrieved from http://www.aifs. gov.au/institute/pubs/pubsyear2007.php

Ickovics, J.R., Carroll-Scott, A., Peters, S.M., Schwartz, M., Gilstad-Hayden, K., & McCaslin, C. (2014). Health and academic achievement: Cumulative effects of health assets on standardized Test scores among urban youth in the United States. *Journal of School Health*, 84(1), 40 – 48, doi: 10.1111/josh.12117

Institute of Medicine. (2001). *Crossing the Quality Chasm: A new Health System for the 21st Century*. Washington, DC: National Academy Press.

Jensen-Doss, A., Hawley, K.M., Lopez, M. & Osterberg, L.D. (2009). Using evidence based treatments: the experiences of youth providers working under a mandate. *Professional Psychology Research and Practice*, 40, 417-424. Retrieved from http://www.apa.org/pubs/journals/pro/index.aspx

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(9), 1548 – 15555. doi:10.1176/appi.ajp.159.9.1548

Kazdin, A. E., Holland, L., & Crowley, M. (1997). Family experience of barriers to treatment and premature termination from child therapy. *Journal of Consulting and Clinical Psychology*, 65, 453–463.

Kelly, M. S., Frey, A., Thompson, A., Klemp, H., Alvarez, M., & Berzin, S. C. (2016). Assessing the National School Social Work Practice Model: Findings from the Second National School Social Work Survey. *Social Work*, *61*(1), 17-28.

Knaapen L. 2013. Being "evidence-based" in the absence of evidence: the management of non-evidence in guideline development. *Soc. Stud. Sci*. 43:681–706

Kumar, R., O'Malley, P.M., Johnston, L.D., & Laetz, V.B. (2013). Alcohol, tobacco, and other drug use prevention programs in U.S. schools: A descriptive summary. *Prevention Science*, 14, 581 – 592. doi: 10.1007/s11121-012-0340-z.

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. doi: 10.1007/s12310-010-9038-1

Lassen, S.R., Steele, M.M., & Sailor, W. (2006). The relationship of school-wide positive behavior support to academic achievement in an urban middle school. *Psychology in the Schools*, 43(6), 701 – 712, doi: 10.1002/pits.20177

Masi, R., & Cooper, J.L. (2006). *Children's mental health: Facts for policymakers*. New York: National Center for Children in Poverty, Mailman School of Public Health, Columbia University.

McKevitt, Brian C., & Braaksma, Angelisa D. (2008). Best practices in developing a positive behavior support system at the school level. In A. Thomas & J. Grimes (Eds.) *Best Practices in School Psychology V*. (pp. 735 – 745). Bethesda, MD: NASP.

McReynolds, P. (1997). *Lightner Witmer: His life and times.* Washington, DC: American Psychological Association. doi: 10.1037/10253-000

Merikangas, K. R., He, J., Burstein, M., Swanson, S.A., Avenevoli, S., Cui, L., Benjet, C., Georgiades, K., & Swendsen, J.. (2010). Lifetime prevalence of mental disorders in US adolescents: Results form the National Comorbidity Study-Adolescent Supplement (NCS-A). *Journal of the American Academy of Child and Adolescent Psychiatry*, 49(10), 990 – 989. doi: 10.1016/j.jaac.2010.05.017.

Merikangas, Kathleen Ries, et al. "Service utilization for lifetime mental disorders in US adolescents: Results of the National Comorbidity Survey–Adolescent Supplement (NCS-A)." *Journal of the American Academy of Child & Adolescent Psychiatry* 50.1 (2011): 32-45.

Miller, A. L., Krusky, A., Franzen, S., Cochran, S., & Zimmerman, M. (2012). Partnering to Translate Evidence-Based Programs to Community Settings: Bridging the Gap Between Research and Practice. *Health Promotion Practice*, *13*(4), 559–566. http://doi.org/10.1177/1524839912438749

Nakamura, B.J., Higa-McMillan, C.K., Okamura, K.H., & Shimabukuro, S. (2011). Knowledge of and attitudes towards evidence based practices in community child mental health practitioners. *Administration and Policy in Mental Health*, 38, 287 – 300. doi:10.1007/s10488-011-0351-2.

National Association of School Psychologists. (2010). *A model of comprehensive and integrated school psychological services*. Bethesda, MD: Author. Retrieved from http://www.nasponline.org/standards/practice-model

National Center for Children in Poverty. (2006, November). *Children's mental health: Facts for policymakers*. New York: Author.

National Council on Crime and Delinquency. (2007, January). *And justice for some: Differential treatment of youth of color in the juvenile justice system*. Oakland, CA: Author.

Nelson, T.D., & Steele, R.G. (2008). Influences on practitioner treatment selection: Best research evidence and other considerations. *Journal of Behavioral Health Services & Research*, 35(2), 170 – 178. doi: 10.1007/s11414-007-9089-8.

Nelson, T.D., Steele, R.G., & Mize, J.A. (2006). Practitioners' attitudes towards evidence-based practice: Themes and challenges. *Administration and Policy in Mental Health and Mental Health Services Research*, 33, 398 – 409. doi: 10.1007/s10488-006-0044-4.

Netzel, D.M., & Eber, L. (2003). Shifting from reactive to proactive discipline in an urban school district: A change of focus through PBIS implementation. *Journal of Positive Behavior Interventions*, 5(2), 71 – 79, doi: 10.1177/10983007030050020201

Novins, D.K, Green, A. E., Legha, R. K., & Aarons, G. A. (2013). Dissemination and implementation of evidence based practices for child and adolescent mental health: A systematic review. *Journal of the American Academy of Child & Adolescent Psychiatry*, 52(10), 1009 – 1025. doi: doi:10.1016/j.jaac.2013.07.012

NREPP: SAMHSA's National Registry of Evidence-based Programs and Practices (2014). Retrieved April 2, 2014, from http://www.nrepp.samhsa.gov/Search.aspx

Office of Special Education Programs. (2011). 30th Annual report to Congress on the implementation of the Individuals with Disabilities Education Act, 2008. Washington D.C.: U.S Department of Education

Owens, J. S., Lyon, A. R., Brandt, N. E., Warner, C. M., Nadeem, E., Spiel, C., & Wagner, M. (2014). Implementation Science in School Mental Health: Key Constructs in a Developing Research Agenda. *School Mental Health*, *6*(2), 99–111. http://doi.org/10.1007/s12310-013-9115-3

Parks, J. J. (2007). Implementing practice guidelines: lessons from public mental health settings. *Journal of Clinical Psychiatry*, *68*(4), 45.

Paxton, R., Chaplin, L., Selman, M., Liddon, A., Cramb, G., & Dodgson, G. (2003). Early intervention in psychosis: A pilot study of methods to help existing staff adapt. *Journal of Mental Health*, 12(6), 627 – 636. doi:10.1080/09638230310001627973

Pinto, R. M., Yu, G., Spector, A. Y., Gorroochurn, P., & McCarty, D. (2010). Substance abuse treatment providers' involvement in research is associated with willingness to use findings in practice. *Journal of Substance Abuse Treatment*, *39*(2), 188–194. http://doi.org/10.1016/j.jsat.2010.05.006

Rodriguez-Soto, N.C., Bernal, G., & Cumba-Avilés, E. (2015). The role of individual characteristics, knowledge, and attitudes toward the use of evidence-based practices among mental health providers in Puerto Rico. *Revista Puertorriqquena de Psicologia*, 26(1)122 - 134

Rones, M., & Hoagwood, K. (2000). School-based mental health services: A research review. *Clinical Child and Family Psychology Review*, 3, 223-241. Retrieved from http://www.springer.com/psychology/child+%26+school+psychology/journal/10567

Rogers, E.M. (1995). Diffusion of Innovations (4th ed.). New York: Free Press.

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

Rousseau, D. M., & Gunia, B. C. (2016). Evidence-Based Practice: The Psychology of EBP Implementation. *Annual Review of Psychology*, *67*, 667-692.

Sharma, S. (1996). *Applied Multivariate Techniques*. John Wiley & Sons.

Silverman, W. K., & Hinshaw, S. P. (2008). The second special issue on evidence based psychosocial treatment for children and adolescents: A 10-year update. *Journal of Clinical Child and Adolescent Psychology*, 37(1), 1-7. doi: 10.1080/15374410701817725.

Slade, E. P. (2002). Effects of school-based mental health programs on mental health service use by adolescents at school and in the community. *Mental Health Services Research, 4*, 151-166.

SRI International. (2006, November). *Facts from NLTS2: School behavior and disciplinary experiences of youth with disabilities*. Washington, DC: National Center for Special Education Research, Institute of Education Sciences, U.S. Department of Education.

Stahmer, A.C., & Aarons, G.A. (2009). Attitudes toward adoption of evidence based practices: A comparison of autism early intervention providers and child mental health providers. *Psychological Services*, 6, 223-234. doi: 10.1037/a0010738

Stewart, R. E., Adams, D. R., Mandell, D. S., Hadley, T. R., Evans, A. C., Rubin, R., ... & Beidas, R. S. (2015). The Perfect Storm: Collision of the Business of Mental Health and the Implementation of Evidence-Based Practices. *Psychiatric Services*.

Stewart, R. E., & Chambless, D. L. (2007). Does psychotherapy research inform treatment decisions in private practice? *Journal of Psychology*, 63, 267- 281. doi: 10.1002/jclp.20347.

Stewart, R.E., Stirman, S.W., & Chambless, D.L. (2012). A qualitative investigation of practicing psychologists' attitudes toward research informed practice: Implications for dissemination strategies. *Professional Psychology: Research and Practice*, 43, 100-109. doi: 10.1037/a0025694.

Stirman, S. W., Gutner, C. A., Crits-Christoph, P., Edmunds, J., Evans, A. C., & Beidas, R. S. (2015). Relationships between clinician-level attributes and fidelity-consistent and fidelity-inconsistent modifications to an evidence-based psychotherapy. *Implementation Science*, *10*(1), 115.

Sugai, G., & Horner, R. (1999). Discipline and behavioral support: Practices, pitfalls, and promises. *Effective School Practices*, 17, 10 -22.

Thomas, R., Aimmer-Gembeck, M.J., & Chaffin, M. (2013). Practitioners' views and use of evidence-based treatment: Positive attitudes but missed opportunities in children's services. *Administration and Policy in Mental Health*, 1-11. doi: 10.1007/s10488-013-0471-y.

Tormala, Z.L., & Petty, R.E. (2002). What doesn't kill me makes me stronger: the effects of resisting persuasion on attitude certainty. *Journal of Personality and Social Psychology*, 83, 1298 – 1313. doi: http://www.apa.org/pubs/journals/psp/

Toth, S.L., & Manly, J.T. (2011). Bridging research and practice: Challenges and successes in implementing evidence-based preventive intervention strategies for child maltreatment. *Child Abuse & Neglect*, 35, 633 – 636. doi: 10.1016/j.chiabu.2011.05.003

Turnbull, H.R.I., Wilcox, B.L., & Stowe, M.J. (2002). A brief overview of special education law with focus on autism. *Journal of Autism and Developmental Disorders*, 32, 479 – 493.

United States Public Health Service. (2001). *Youth violence: A report of the Surgeon General*. Rockville, MD: U.S. Department of Health and Human Services Administration, Center for Mental Health Services, National Institutes of Health, National Institute of Mental Health. doi: 10.1037/e310762005-001

U.S. Department of Education Office for Civil Rights (2006). Civil rights data collection. Retrieved from http://ocrdata.ed.gov/

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 Administration, Center for Mental Health Services, National Institutes of Health, National Institute of Mental Health. doi: 10.1037/e636982009-001

Walrath, C., Sheehan, A. Holden, E., Hernandez, M., & Blau, G. (2006) Evidence based treatments in the field: A brief report on provider knowledge, implementation, and practice. *Journal of Behavioral Health Services and Research*, 33(2), 244 – 253. doi: 10.1007/s11414-005-9008-9.

Walter, H.G., Gouze, K., Cicchetti, C., Arend, R., Mehta, T., Schmidt, J., & Skvarla, M. (2011). A pilot demonstration of comprehensive mental health services in inner-city public schools. *Journal of School Health*, 81(4), 185 – 193. doi: 10.1111/j.1746-1561.2010.00578.x

Wang, P.S., Berglund, P., & Kessler, R.C. (2000). Recent care of common mental disorders in the United States: Prevalence and conformance with evidence-based recommendations. *Journal of General Internal Medicine*, 15, 284 – 292: doi: 10.1046/j.1525-1497.2000.9908044.x.

Wang, R., Yang, Y., Chen, R., Kan, H., Wu, J., Wang, K., … Lu, Y. (2015). Knowledge, Attitudes, and Practices (KAP) of the Relationship between Air Pollution and Children's Respiratory Health in Shanghai, China. *IJERPH*, 12(2), 1834–1848. doi:10.3390/ijerph120201834

Warren, J.S., Edmonson, H.M., Griggs, P., Lassen, S.R., McCart, A., Turnbull, A. et al. (2003). Urban applications of school-wide positive behavior support: Critical issues and lessons learned. *Journal of Positive Behavior Interventions*, 5, 80 – 91, doi: 10.1177/10983007030050020301

Watkins, M. (2001). Principles of persuasion. *Negotiation Journal,* 17, 115 – 37. doi: http://onlinelibrary.wiley.com/journal/10.1111/%28ISSN%291571-9979

Weist, M., Lever, N., Stephan, S., Youngstrom, E., Moore, E., Harrison B., et al. (2009). Formative evaluation of a framework for high quality, evidence based services in school mental health. *School Mental Health,* 1(4), 196 – 211. doi:10.1007/s12310-009-9018-5.

Weisz, J. R., Jensen-Doss, A., & Hawley, K.M. (2005). Youth psychotherapy outcome research: A review and critique of the evidence base. *Annual Review of Psychology*, 56, 337 – 363. doi: 10.1146/annurev.psych.55.090902.141449.

Weisz, J.R., Jensen-Doss, A., & Hawley, K.M. (2006). Evidence-based youth psychotherapies versus usual clinical care: A meta-analysis of direct comparisons. *American Psychologist*, 61(7), 671 – 689. doi: 10.103/0003-066X.61.7.671.

Westen, D., Novotny, C.M., & Thompson-Brenner, H. (2005). EBP does not equal EST: Reply to Crits-Christoph et al. (2005) and Weisz et al. (2005). *Psychological Bulletin*, 131(3), 427 – 433. Retrieved from: http://www.apa.org/pubs/journals/bul/

Wilder, D.A., Atwell, J., Wine, B. (2006). The effects of varying levels of treatment integrity on child compliance during treatment with a three-step prompting procedure. *Journal of Applied Behavior Analysis*, 39, 369 – 373. doi:10.1901/jaba.2006.144-05

Wilson, S.J., Lipsey, M.W., & Derzon, J.H. (2003). The effects of school based intervention programs on aggressive behavior: A meta-analysis. *Journal of Consulting and Clinical Psychology*, 71, 136 – 149. doi:10.1037/0022-006x.71.1.136

Yell, M.L., & Drasgow, E. (2000). Litigating a free appropriate public education. The Lovaas hearing and cases. *Journal of Special Education*, 33, 205 – 214. doi:10.1177/002246690003300403

TABLES

Table 2

Funding Source

	Whole Sample	Students	Professionals	School-hired providers	Non-School hired providers
Source			Frequency (%)		
Fee for Service	15 (9.4)	_	15 (11.5)	_	15 (14.3)
School Funded Salary	49 (30.6)	2 (7.1)	46 (35.4)	48 (87.3)	1 (1.0)
Agency Funded Salary	38 (23.8)	1 (3.6)	36 (27.7)	_	38 (36.2)
Blend	32 (20)	2 (7.1)	30 (23.1)	_	32 (30.5)
Other	26 (16.3)	23 (82.1)	3 (2.3)	7 (12.7)	19 (18.1)

Table 3

KMO and Bartlett's Test for EBPAS-50 and EBPAS-15

		EBPAS-50	EBPAS-15
	Kaiser-Meyer-Olkin Measure of Sampling Adequacy	.744	.754
Bartlett's Test of Sphericity			
	Approx. Chi-Square	4362.286	862.940
	Df	1225	105
	Sig	.000	.000

Table 4

Factor Loadings for the EBPAS-15 Items

Factor	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	4.369	29.126	29.126
2	2.175	14.500	43.626
3	1.651	11.005	54.630
4	1.466	9.771	64.402
5	.943	6.288	70.690
6	.740	4.930	75.620
7	.646	4.310	79.930
8	.622	4.148	84.078
9	.533	3.552	87.630
10	.475	3.169	90.799
11	.374	2.493	93.292
12	.353	2.350	95.642
13	.268	1.785	97.427
14	.238	1.589	99.017
15	.148	.983	100.000

Table 5

Comparison of the Factor Reliabilities: Aarons, 2010, Aarons, 2012 and. Current Study

Factor	Alpha (Aarons, 2010)	Alpha (Aarons, 2012)	Alpha (Maki, 2016)
Requirements	.44	.90	.89
Appeal	.89	.80	.74
Openness	.61	.78	.80
Divergence	.22	**.59**	.68
Limitations	na	.92	.92
Fit	na	.88	.83
Monitoring	na	.87	.89
Balance	na	.79	**.58**
Burden (Reversed)	na	.77	.84
Job Security	na	.82	.81
Organizational Support	na	.85	.81
Feedback	na	.82	.79
EBPAS-15 Total	.76	na	.81
EBPAS-50 Total	na	na	.91

Table 6

Factor Loadings (Above 1) for the EBPAS-50 Items

	Initial Eigenvalues		
Factor	Total	% of Variance	Cumulative %
1	10.148	20.295	20.295
2	5.300	10.599	30.895
3	3.433	6.865	37.760
4	3.050	6.101	43.860
5	2.659	5.319	49.179
6	2.366	4.732	53.911
7	1.990	3.979	57.891
8	1.763	3.527	61.417
9	1.362	2.723	64.140
10	1.294	2.589	66.729
11	1.201	2.401	69.130
12	1.134	2.268	71.398
13	1.040	2.081	73.479

Table 7

Tests of Normality for EBPAS-15 Total

	Shapiro-Wilk Statistic	df	Significance
Total Sample	.984	159	.056
Students	.958	28	.314
Professionals	.986	129	.188
School Hired	.989	55	.892
Non School Hired	.978	104	.079

Table 8

EBPAS 15 Total Score Descriptives

	Total Population	Students	Professionals	School-hired	Non-school hired
Mean	2.9298	3.0726	2.8949	3.0193	2.8825
CI Lower Bound	2.8528	2.9265	2.8061	2.9027	2.7821
CI Upper Bound	3.0068	3.2187	2.9838	3.1358	2.9830
5% Trimmed Mean	2.9436	3.0648	2.9084	3.0204	2.8999
Median	3.0000	3.0690	3.0000	3.0000	3.0000

Table 9

Levene's Test for Equality of Variances, t-Test, and Cohen's d

	Levene's		t-Test for Equality of Means							Cohen's	
	F	Sig.	T	Df	Sig (2 tail)	Mean Diff	Std. Error Diff.	95% CI Lower	95% CI Upper	*d*	r
EBPAS-15											
Experi-ence	3.270	.072	1.742	155	.084	.17771	.10202	-.02383	.37924	.40	.19
Employ-er	3.223	.075	1.678	157	.095	.13673	.08149	-.02422	.29768	.27	.14
Require-ments											
Experi-ence	.011	.915	1.301	154	.195	.22842	.17561	-.11849	.5733	.27	.14
Employ-er	1.465	.228	2.049	156	.042	.28674	.13996	.01650	.55698	.35	.17

Table 10

Tests of Normality for Requirements

	Shapiro-Wilk Statistic	df	Significance
Total Sample	.930	158	.000
Students	.900	28	.012
Professionals	.934	128	.000
School Hired	.883	54	.000
Non School Hired	.942	104	.000

Table 11

Comparison of Hours in a School with Hours Implementing EBPs

	Total Population	Students	Professionals	School Hired Providers	Non-School Hired Providers
			Avg		
Average # of Hours per Week Implementing EBPs	9.9281	5.7500	10.9957	9.2300	10.2917
Average # of Hours per Week Working in a School Setting	26.4114	19.5714	28.0078	35.2037	21.8462
	Hours of EBP Implemented per Hour Working in a School				
	.38	.29	.39	.26	.47

Table 12

Employer

	Whole Sample	Students	Professionals	School Hired Providers	Non-Sch Hired Providers
Employer			Frequency (%)		
School District	55 (34.4)	8 (28.6)	46 (35.4)	55 (100)	_
Community Agency-For Profit	2 (1.3)	_	2 (1.5)	_	2 (1.9)
Community Agency-Not for Profit	90 (56.3)	14 (50)	75 (57.7)	_	90 (85.7)
Other	6 (3.8)	5 (17.9)	1 (0.8)	_	6 (5.7)
Community Agency-Unspecified	7(4.4)	1 (3.6)	6 (4.6)	_	7 (6.7)

Table 13

Highest Level of Education Achieved

	Whole Sample	Students	Professionals	School Hired Providers	Non-Sch Hired Providers
Level			Frequency (%)		
Some Grad	3 (1.9)	3 (10.7)	_	1 (1.8)	2 (1.9)
Masters	79 (49.4)	17 (60.7)	62 (47.7)	12 (21.8)	67 (63.8)
Specialist	5 (3.1)	1 (3.6)	3 (2.3)	5 (9.1)	_
Masters + Specialist	34 (21.3)	3 (10.7)	31 (23.8)	24 (43.6)	10 (9.5)
Multiple Masters	16 (10)	2 (7.1)	14 (10.8)	6 (10.9)	10 (9.5)
Doctorate	18 (11.3)	_	18 (13.8)	6 (10.9)	12 (11.4)
Other	4 (2.5)	2 (7.1)	2 (1.5)	1 (1.8)	3 (2.9)

Table 14

Professional Status

	Whole Sample	Students	Professionals	School Hired Providers	Non-Sch Hired Providers
Professional Status			Frequency (%)		
Graduate Student	28 (17.5)	28 (100)	_	8 (14.5)	20 (19)
Non-Licensed Professional	26 (16.3)	_	26 (20)	3 (5.5)	23 (21.9)
Licensed Professional	104 (65)	_	104 (80)	43 (78.2)	61 (58.1)
Missing	2 (1.3)	_	_	1 (1.8)	1 (1)

Table 15

Age

Age	Whole Sample	Students	Professionals	School Hired Providers	Non-Sch Hired Providers
N	155	28	125	52	103
Missing	5	0	5	3	2
Mean	36.21	28.57	37.90	39.12	34.74
Median	33	27	35	37	32
Mode	30	25	30	33	31
Standard Deviation	9.96	5.24	10.05	11	9.09
Minimum	20	23	20	23	20
Maximum	67	48	67	67	67

FIGURES

Figure 6. Scree Plot for EBPAS-15

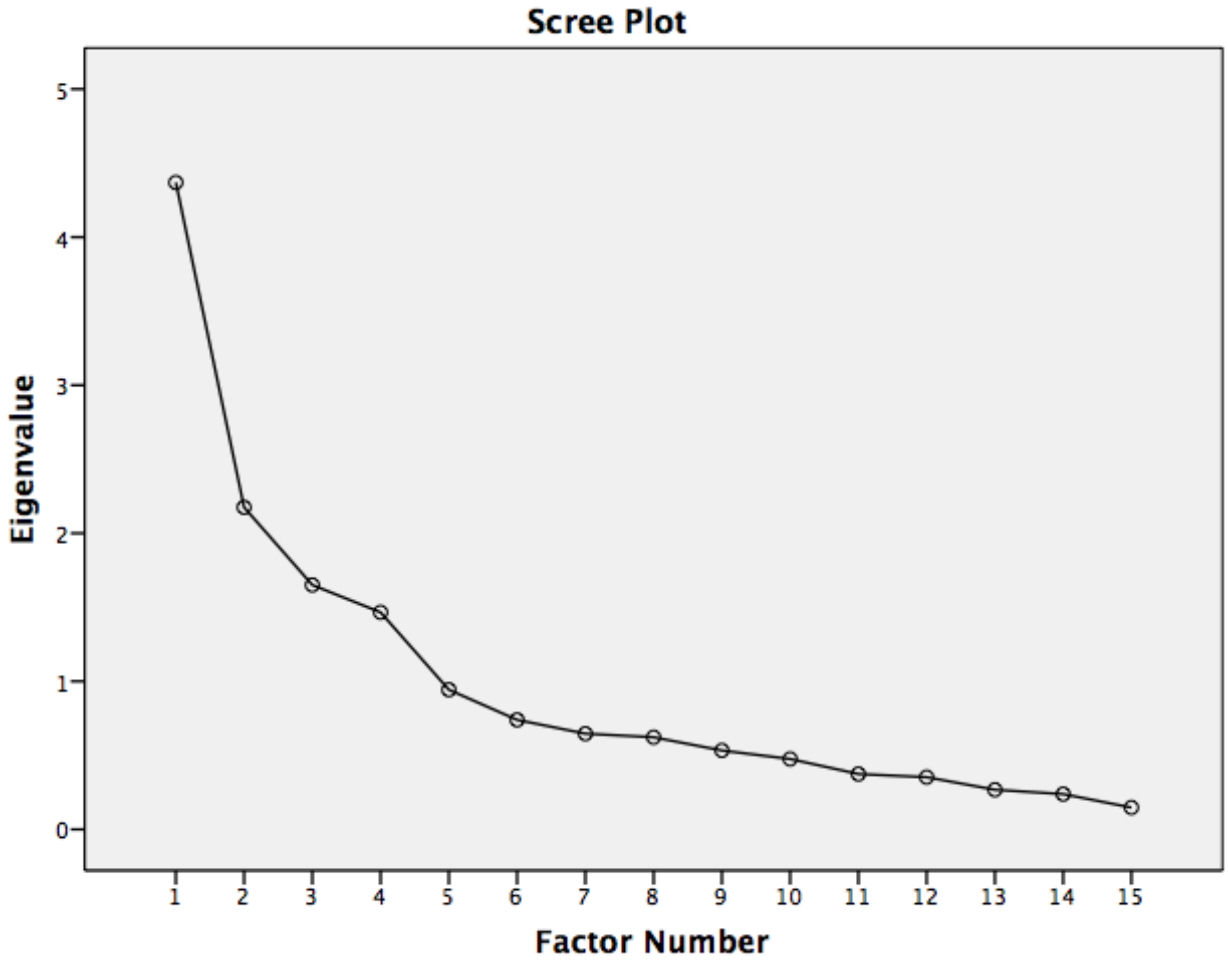


Figure 7. Scree Plot for EBPAS-50

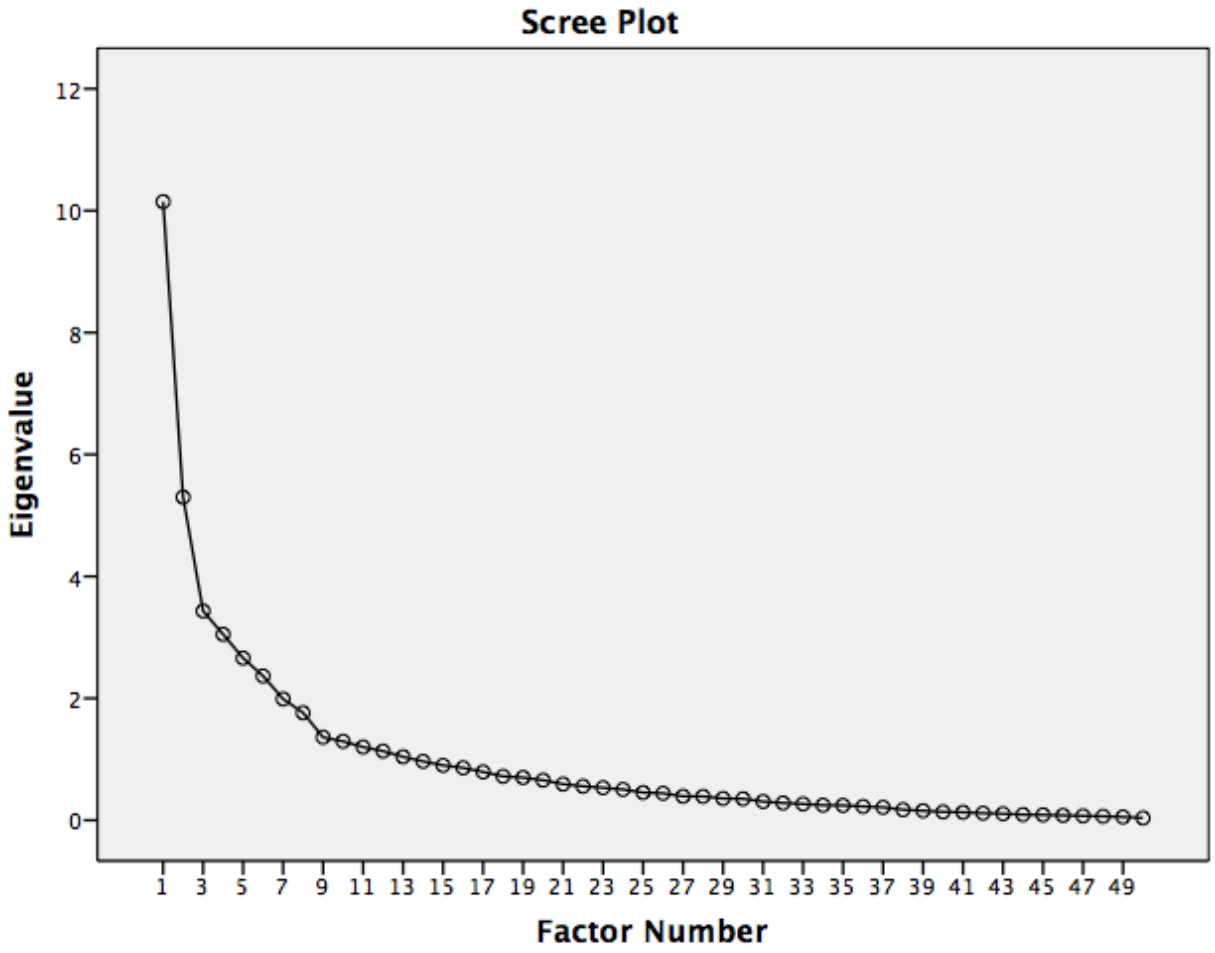


Figure 8. Stem Leaf Plot for EBPAS-15 Total Scores for Entire Sample

```
Frequency    Stem &  Leaf

    1.00 Extremes    (=<1.3)
    2.00        1 .  66
    2.00        1 .  89
    6.00        2 .  000111
    9.00        2 .  222233333
   19.00        2 .  4444444444444455555
   18.00        2 .  666666666666777777
   18.00        2 .  888888888888889999
   29.00        3 .  00000000000000000000000011111
   22.00        3 .  2222222222222223333333
   23.00        3 .  44444444444444455555555
    6.00        3 .  666777
    4.00        3 .  8899

Stem width:      1.00
Each leaf:       1 case(s)
```

Figure 9. Stem Leaf Plot for EBPAS-15 Total Scores for Students

```
Frequency    Stem &  Leaf

   3.00       2 .  444
   4.00       2 .  6667
   3.00       2 .  888
   6.00       3 .  000001
   5.00       3 .  22333
   6.00       3 .  444445
    .00       3 .
   1.00       3 .  9

Stem width:      1.00
Each leaf:       1 case(s)
```

Figure 10. Stem Leaf Plot for EBPAS-15 Total Scores for Professionals

```
Frequency    Stem &  Leaf

     1.00 Extremes    (=<1.3)
     2.00        1 .  66
     2.00        1 .  89
     6.00        2 .  000111
     9.00        2 .  222233333
    16.00        2 .  4444444444455555
    14.00        2 .  66666666677777
    14.00        2 .  88888888889999
    23.00        3 .  00000000000000000001111
    17.00        3 .  22222222222223333
    16.00        3 .  4444444444555555
     6.00        3 .  666777
     3.00        3 .  889

 Stem width:      1.00
 Each leaf:       1 case(s)
```

Figure 11. Stem Leaf Plot for EBPAS-15 Total Scores for School hired providers

```
 Frequency    Stem &  Leaf

   1.00       2 .  0
   2.00       2 .  23
   6.00       2 .  444444
   6.00       2 .  666777
  10.00       2 .  8888889999
  11.00       3 .  00000000011
   7.00       3 .  2222333
   8.00       3 .  44445555
   2.00       3 .  77
   2.00       3 .  89

Stem width:      1.00
Each leaf:       1 case(s)
```

Figure 12. Stem Leaf Plot for EBPAS-15 Total Scores for Non-school hired providers

```
  Frequency    Stem &  Leaf

  1.00 Extremes    (=<1.3)
  2.00        1 .  66
  2.00        1 .  89
  5.00        2 .  00111
  7.00        2 .  2223333
 13.00        2 .  4444444455555
 12.00        2 .  666666666777
  8.00        2 .  88888888
 18.00        3 .  000000000000000111
 15.00        3 .  222222222223333
 15.00        3 .  444444444445555
  4.00        3 .  6667
  2.00        3 .  89

Stem width:      1.00
Each leaf:       1 case(s)
```

Figure 13. Normal Q-Q Plot of EBPAS-15 Total Scores for Entire Sample

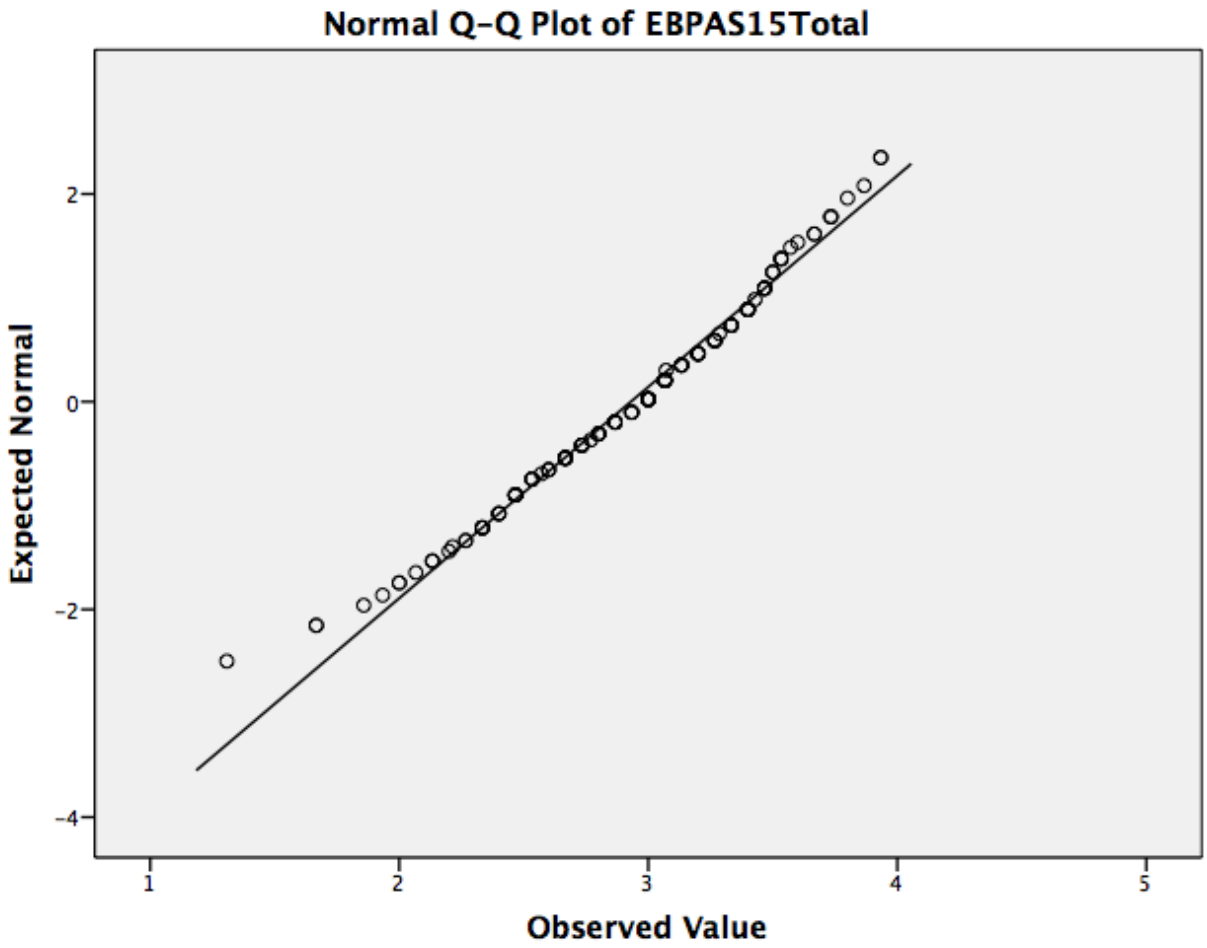


Figure 14. Detrended Normal Q-Q Plot of EBPAS-15 Total Scores for Entire Population

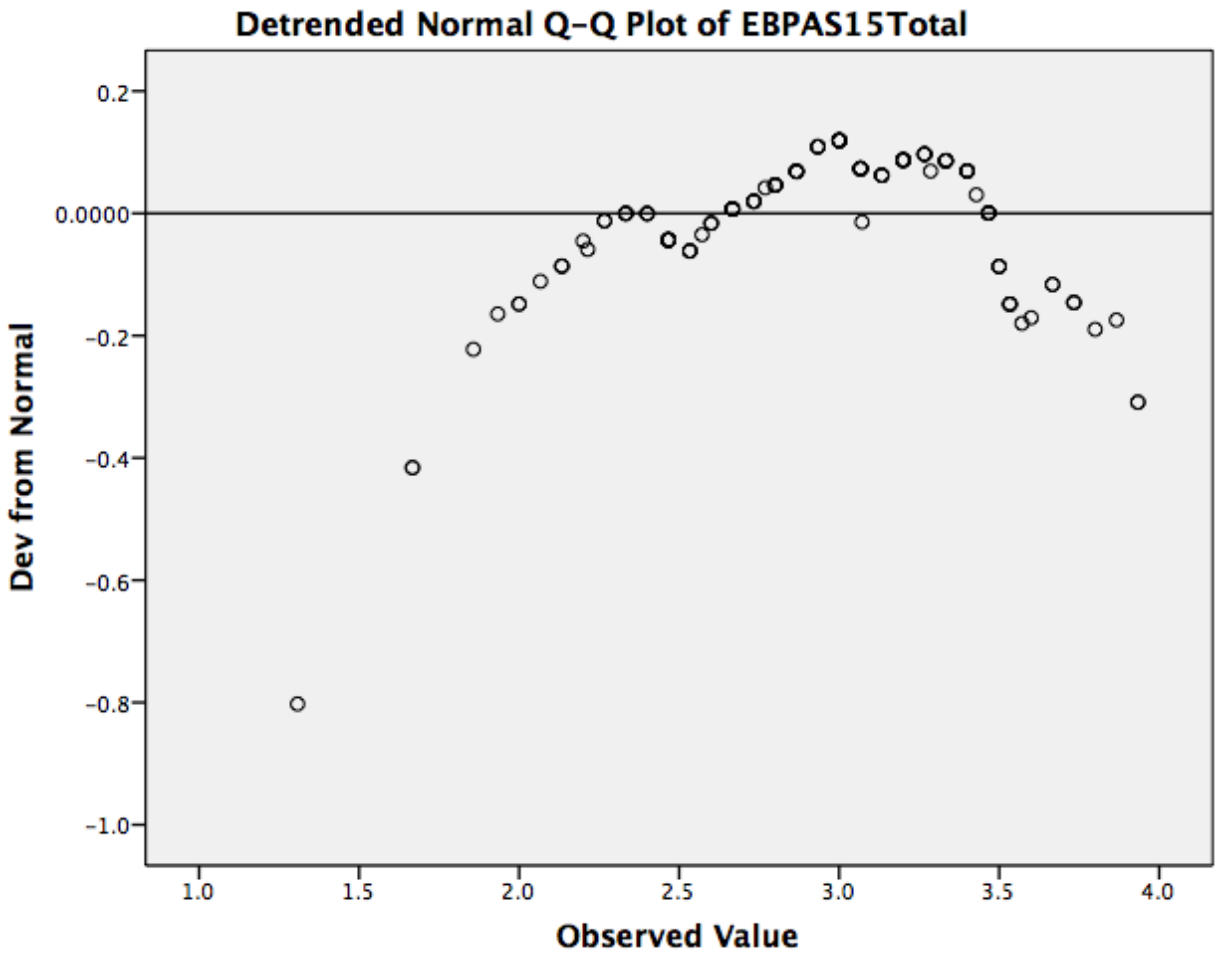


Figure 15. Normal Q-Q Plot of EBPAS-15 Total Scores for Interns

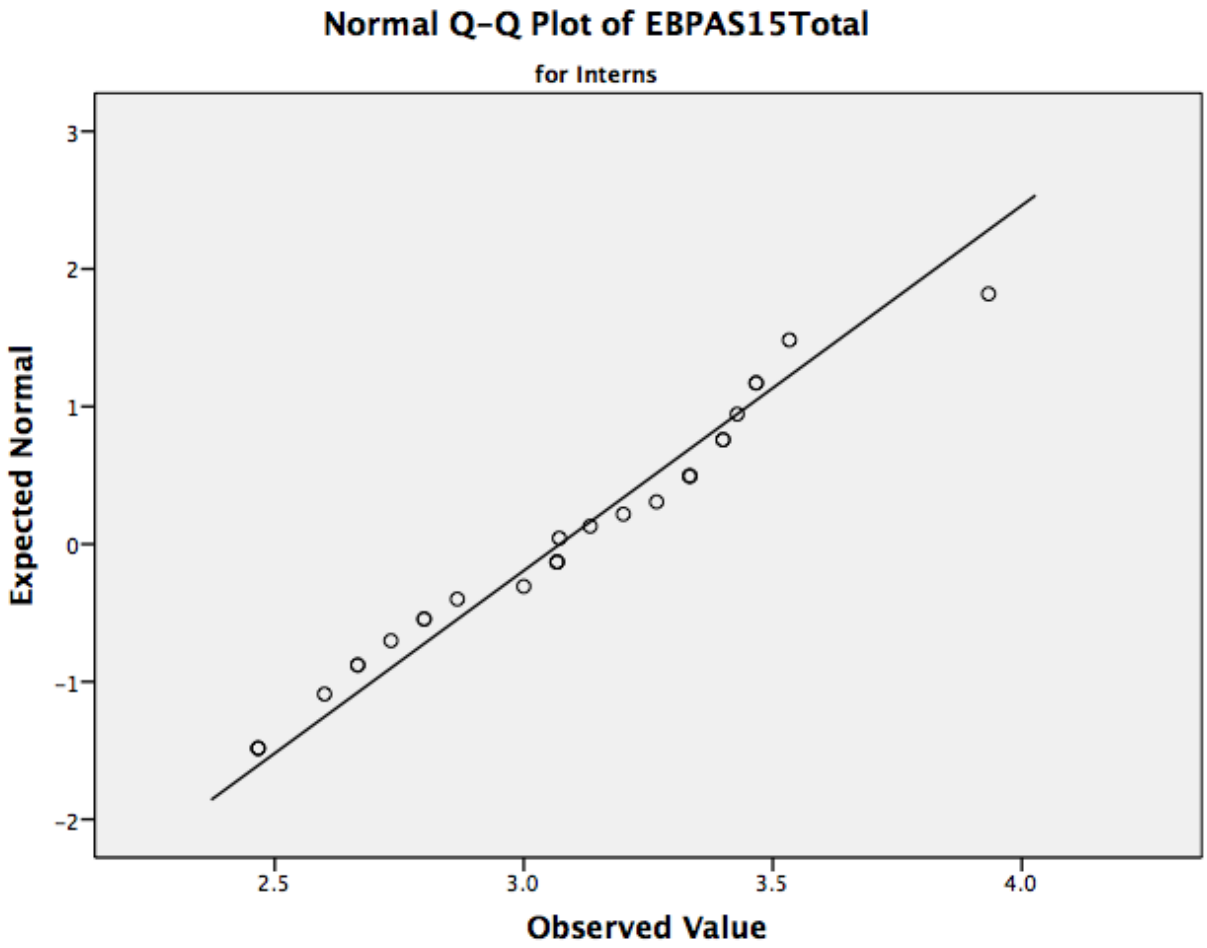


Figure 16. Detrended Normal Q-Q Plot of EBPAS-15 Total Scores for Interns

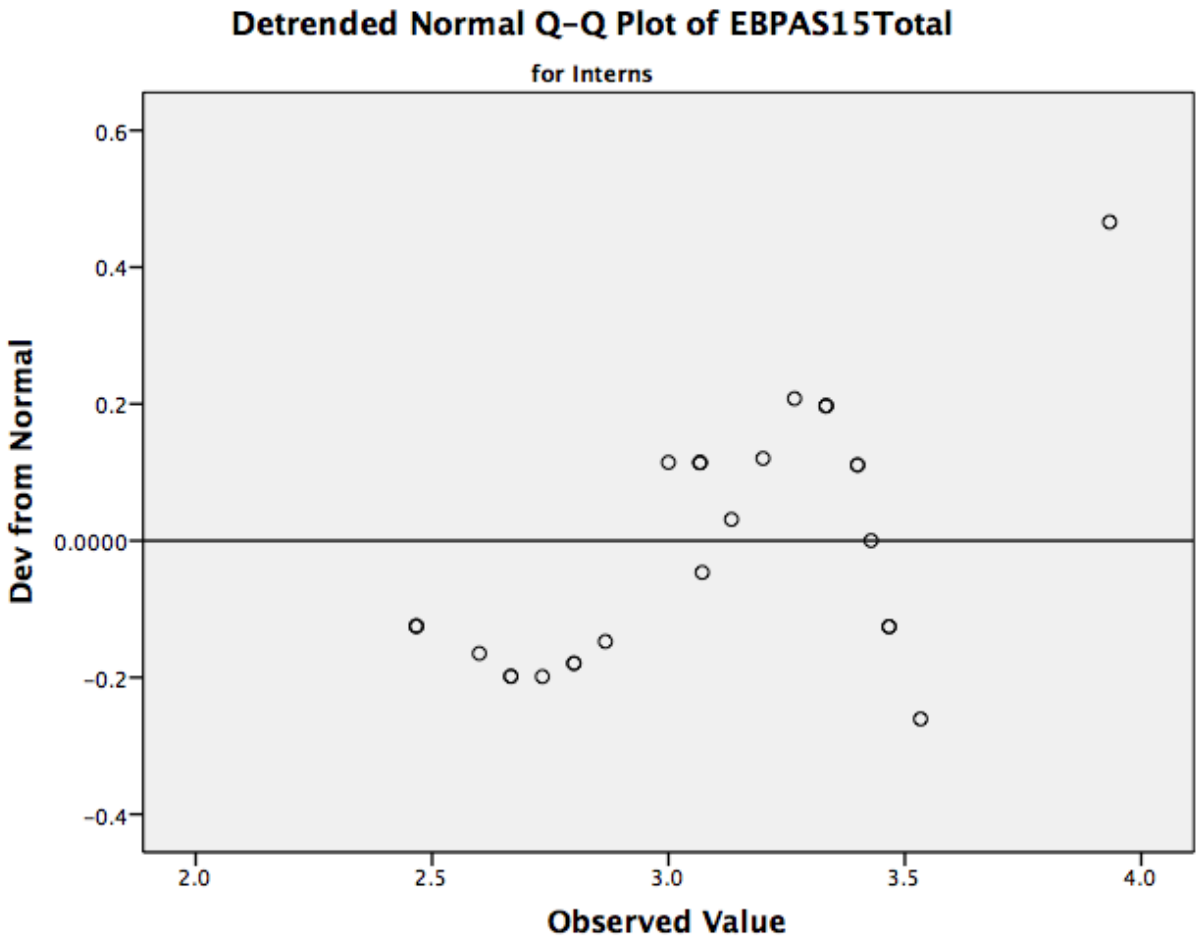


Figure 17. Normal Q-Q Plot of EBPAS-15 Total Scores for Professionals

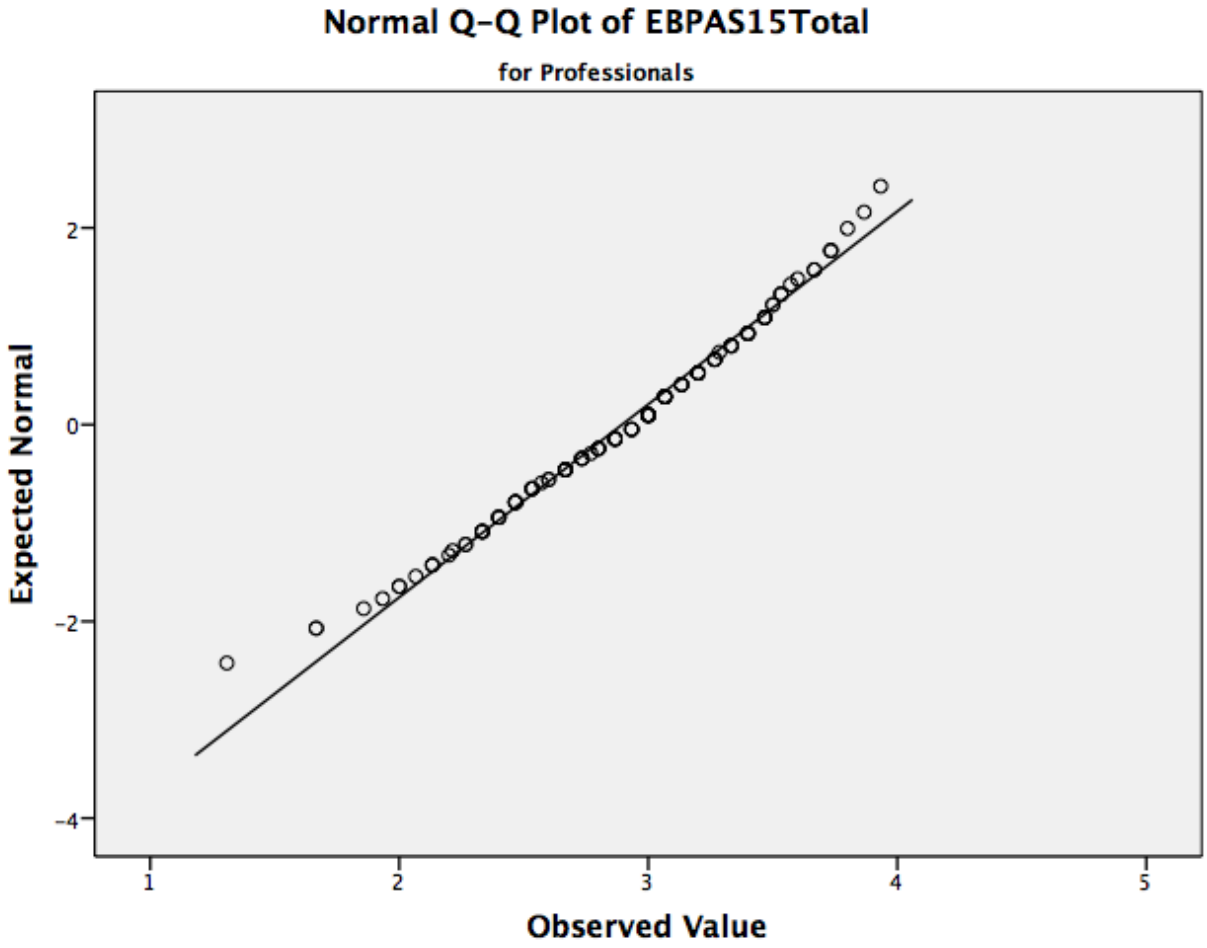


Figure 18. Detrended Normal Q-Q Plot of EBPAS-15 Total Scores for Professionals

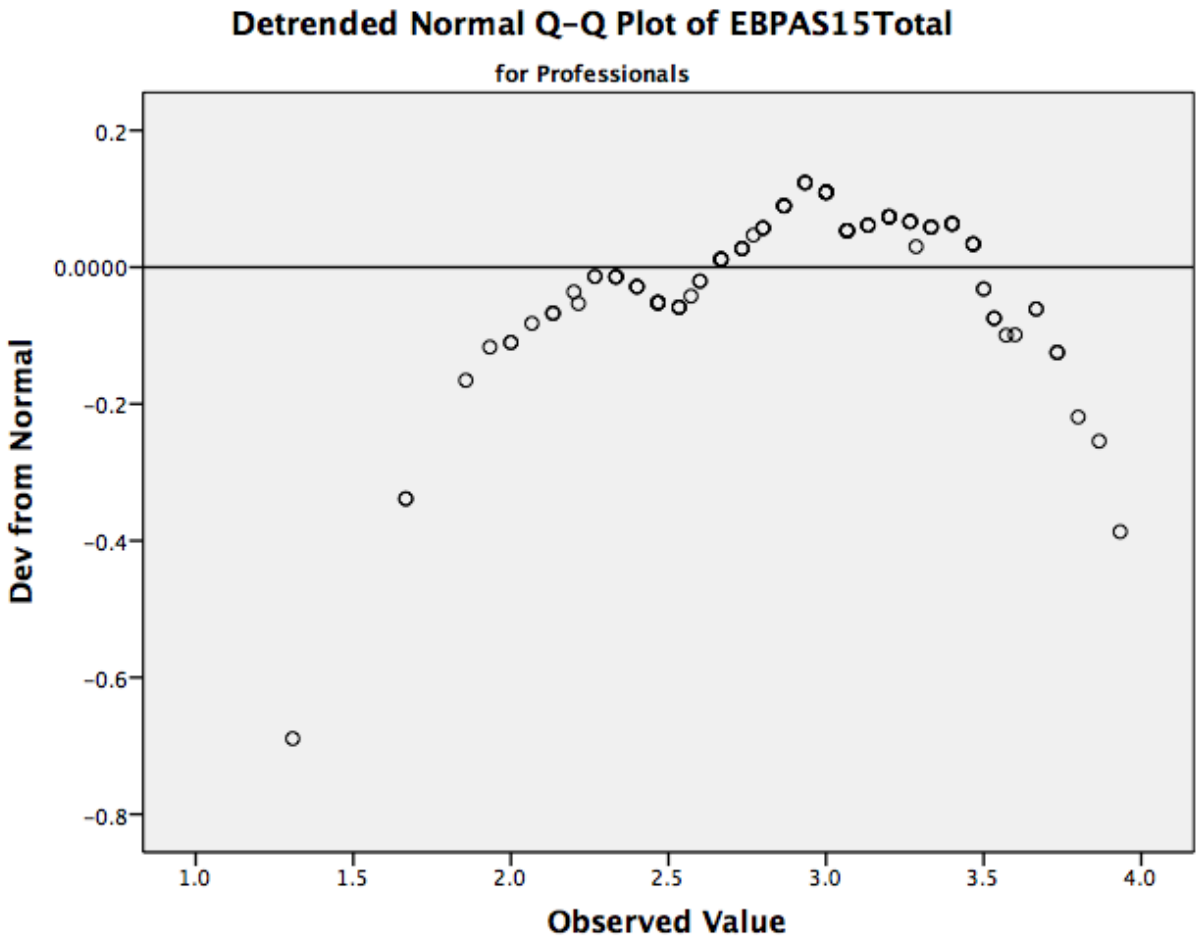


Figure 19. Normal Q-Q Plot of EBPAS-15 Total Scores for School Hired Providers

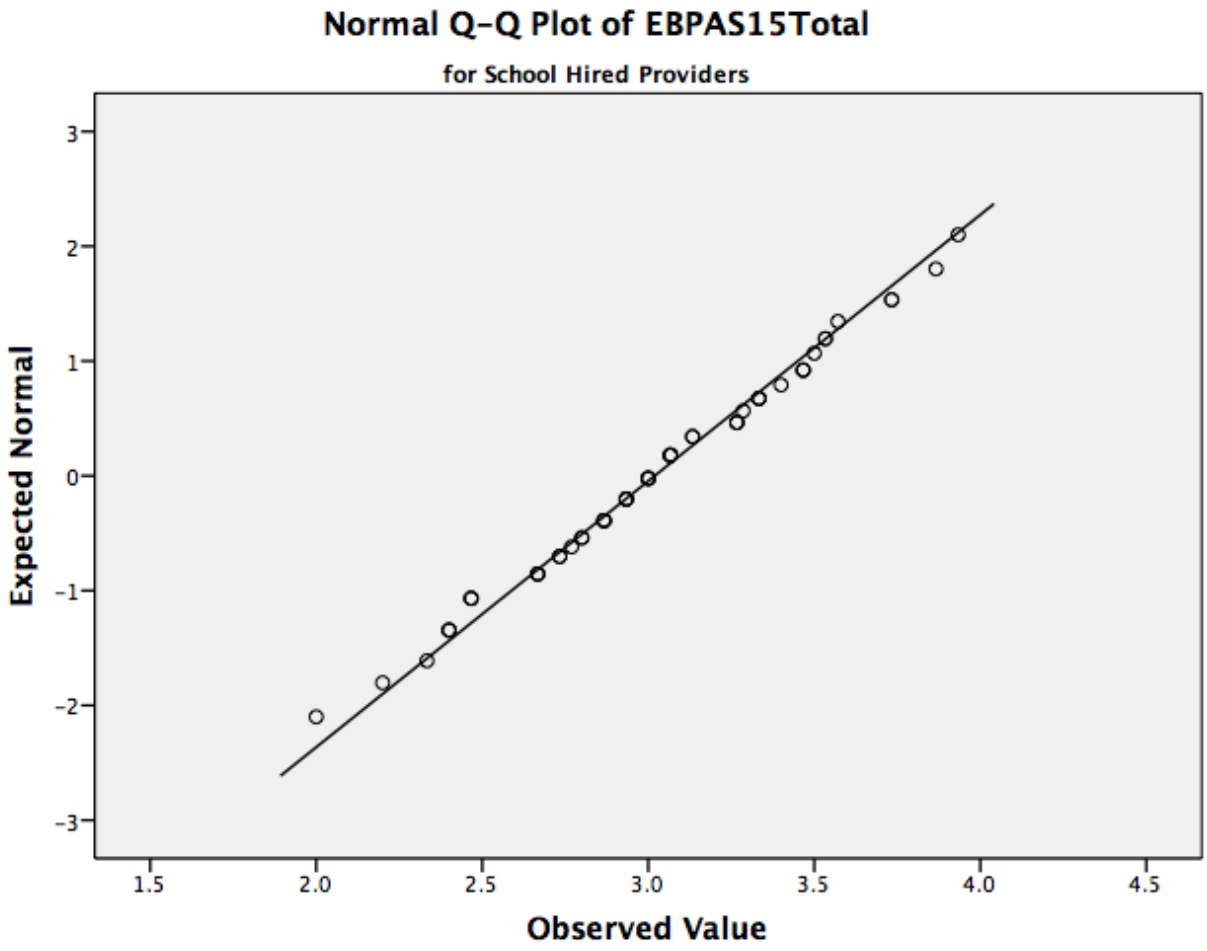


Figure 20. Detrended Normal Q-Q Plot of EBPAS-15 Total Scores for School Hired Providers

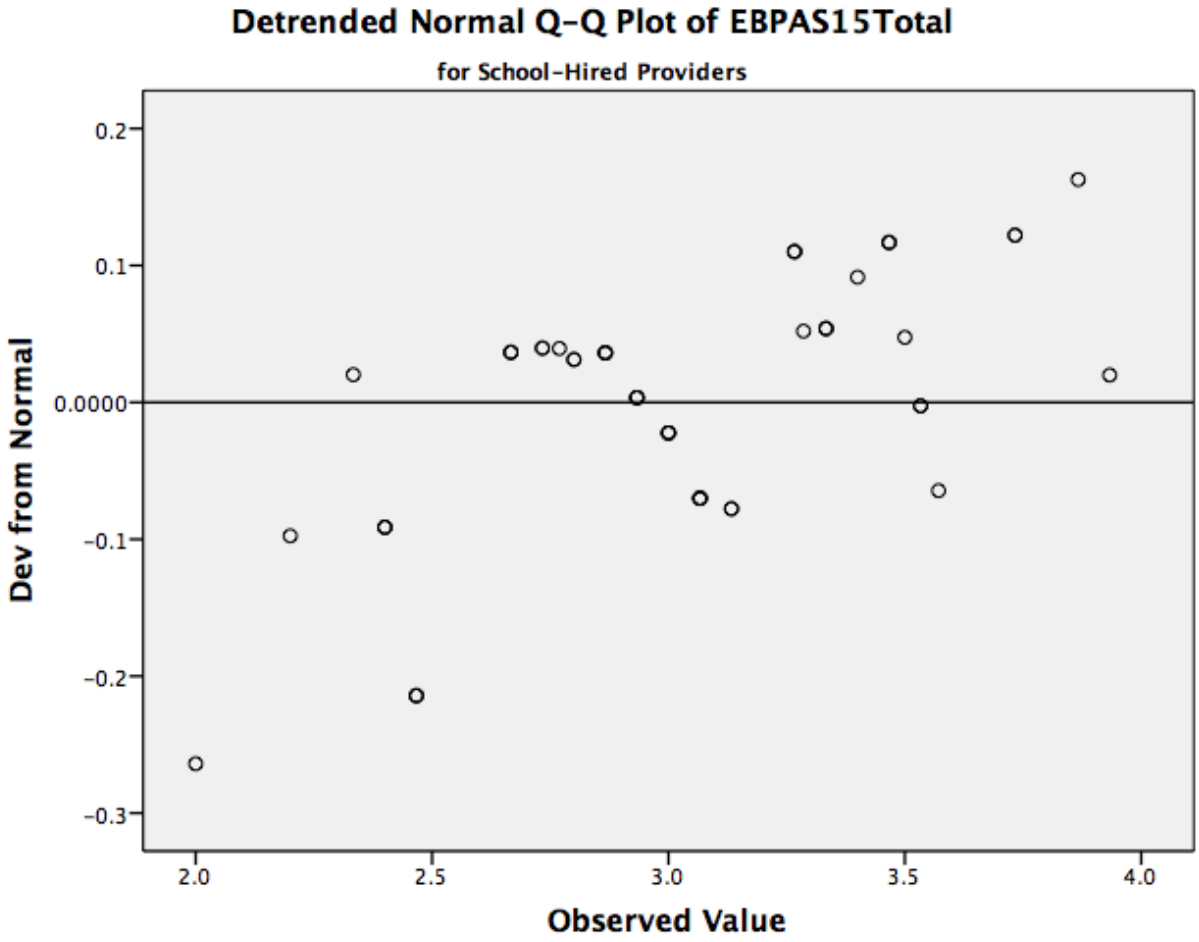


Figure 21. Normal Q-Q Plot of EBPAS-15 Total Scale for Non-School Providers

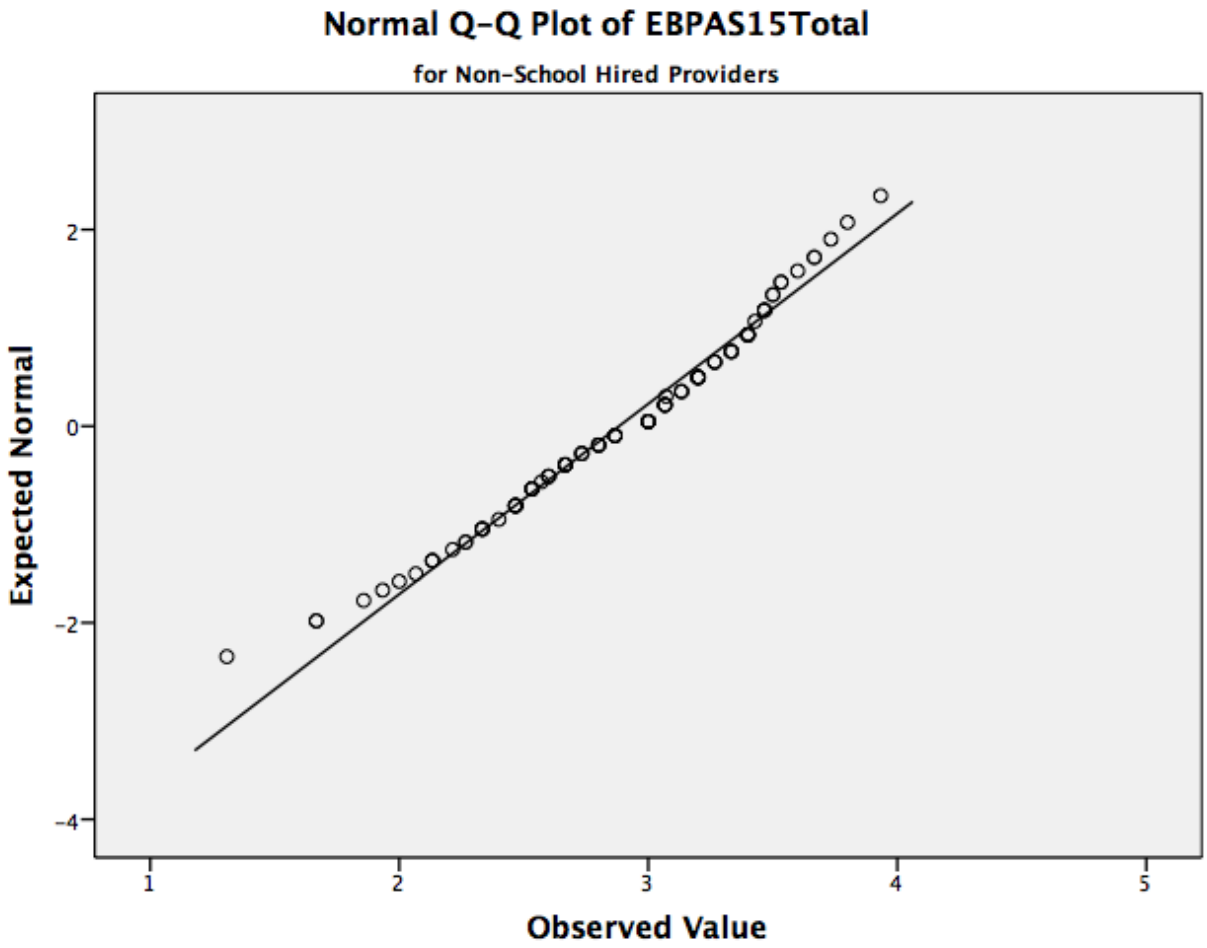


Figure 22. Detrended Normal Q-Q Plot of EBPAS-15 Total Scores for Non-School Hired Providers

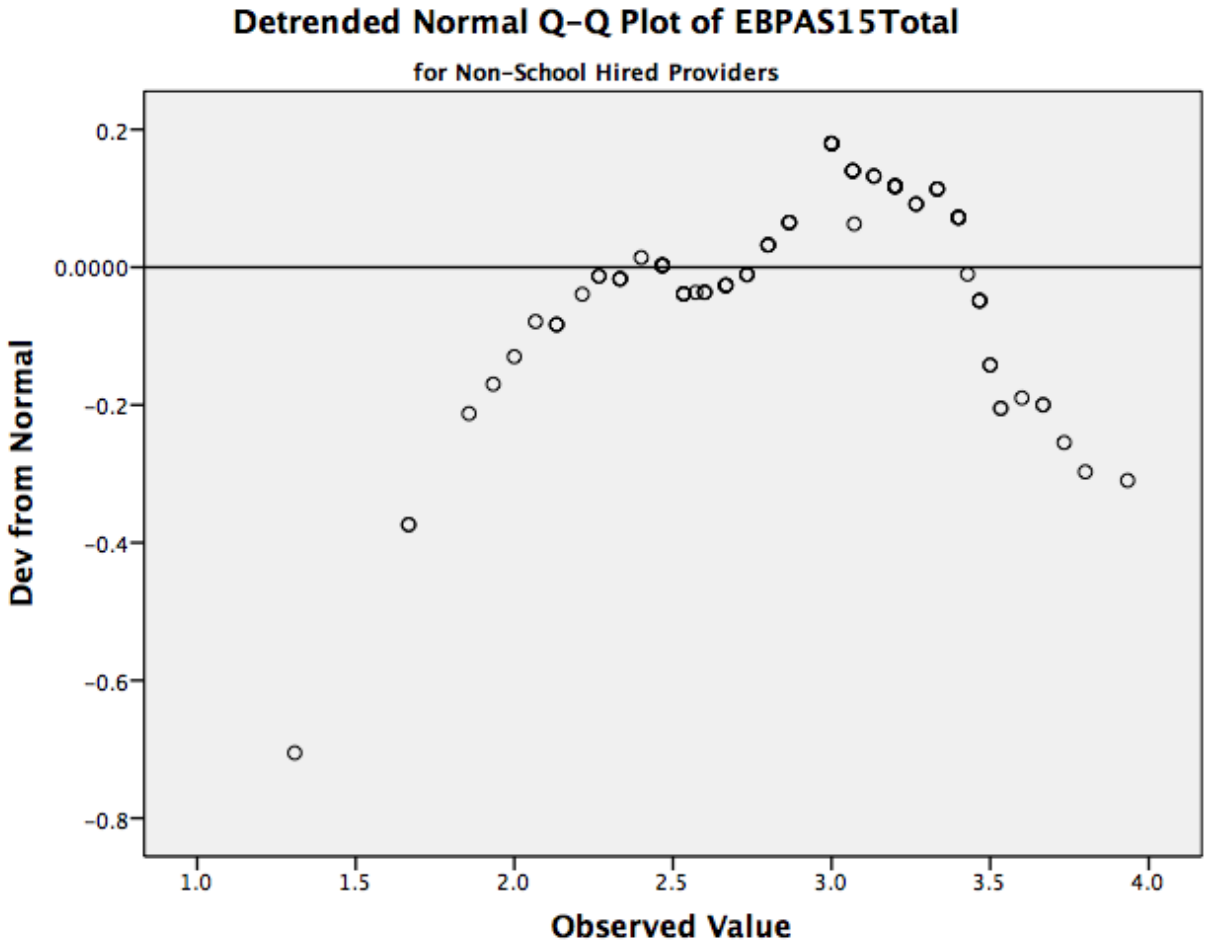


Figure 23. Stem Leaf Plot for Requirements Scores for Entire Sample

```
Frequency    Stem &  Leaf

    1.00 Extremes    (=<.0)
    6.00        1 .  000000
    4.00        1 .  3333
     .00        1 .
    3.00        1 .  666
     .00        1 .
   20.00        2 .  00000000000000000000
   11.00        2 .  33333333333
    3.00        2 .  555
   13.00        2 .  6666666666666
     .00        2 .
   40.00        3 .  0000000000000000000000000000000000000000
   16.00        3 .  3333333333333333
     .00        3 .
   11.00        3 .  66666666666
     .00        3 .
   30.00        4 .  000000000000000000000000000000

Stem width:      1.00
Each leaf:       1 case(s)
```

Figure 24. Stem Leaf Plot for Requirements Scores for Students

```
Frequency    Stem &  Leaf

  1.00       1 .  0
  1.00       1 .  6
  4.00       2 .  0000
  2.00       2 .  56
 10.00       3 .  0000033333
  4.00       3 .  6666
  6.00       4 .  000000

Stem width:      1.00
Each leaf:       1 case(s)
```

Figure 25. Stem Leaf Plot for Requirements Scores for Professionals

```
Frequency    Stem &  Leaf

    1.00 Extremes    (=<.0)
    5.00        1 .  00000
    4.00        1 .  3333
     .00        1 .
    2.00        1 .  66
     .00        1 .
   16.00        2 .  0000000000000000
   11.00        2 .  33333333333
    2.00        2 .  55
   12.00        2 .  666666666666
     .00        2 .
   34.00        3 .  0000000000000000000000000000000000
   11.00        3 .  33333333333
     .00        3 .
    7.00        3 .  6666666
     .00        3 .
   23.00        4 .  00000000000000000000000

Stem width:      1.00
Each leaf:       1 case(s)
```

Figure 26. Stem Leaf Plot for Requirements Scores for School-Hired Providers

```
Frequency    Stem &  Leaf

    4.00 Extremes    (=<1.3)
    5.00        2 .  00033
    4.00        2 .  5566
   25.00        3 .  0000000000000000333333333
    3.00        3 .  666
   13.00        4 .  0000000000000

Stem width:      1.00
Each leaf:       1 case(s
```

Figure 27. Stem Leaf Plot for Requirements Scores for Non-School Hired Providers

```
Frequency    Stem &  Leaf

   1.00       0 .  0
    .00       0 .
   6.00       1 .  000033
   3.00       1 .  666
  26.00       2 .  00000000000000000333333333
  12.00       2 .  566666666666
  31.00       3 .  0000000000000000000000003333333
   8.00       3 .  66666666
  17.00       4 .  00000000000000000

Stem width:      1.00
Each leaf:       1 case(s)
```

Figure 28. Normal Q-Q Plot of Requirements Factor for Entire Sample

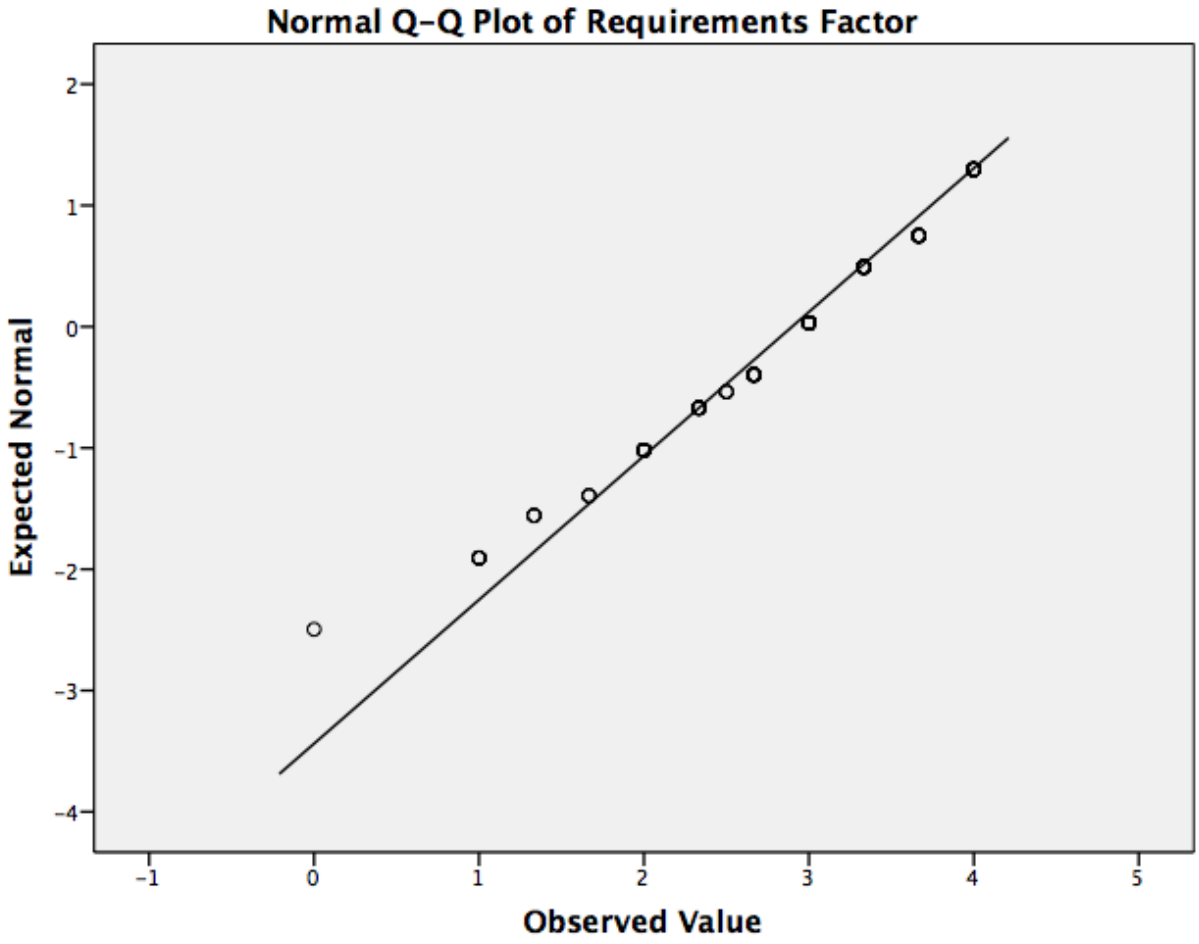


Figure 29. Detrended Normal Q-Q Plot of Requirements Factor for Entire Sample

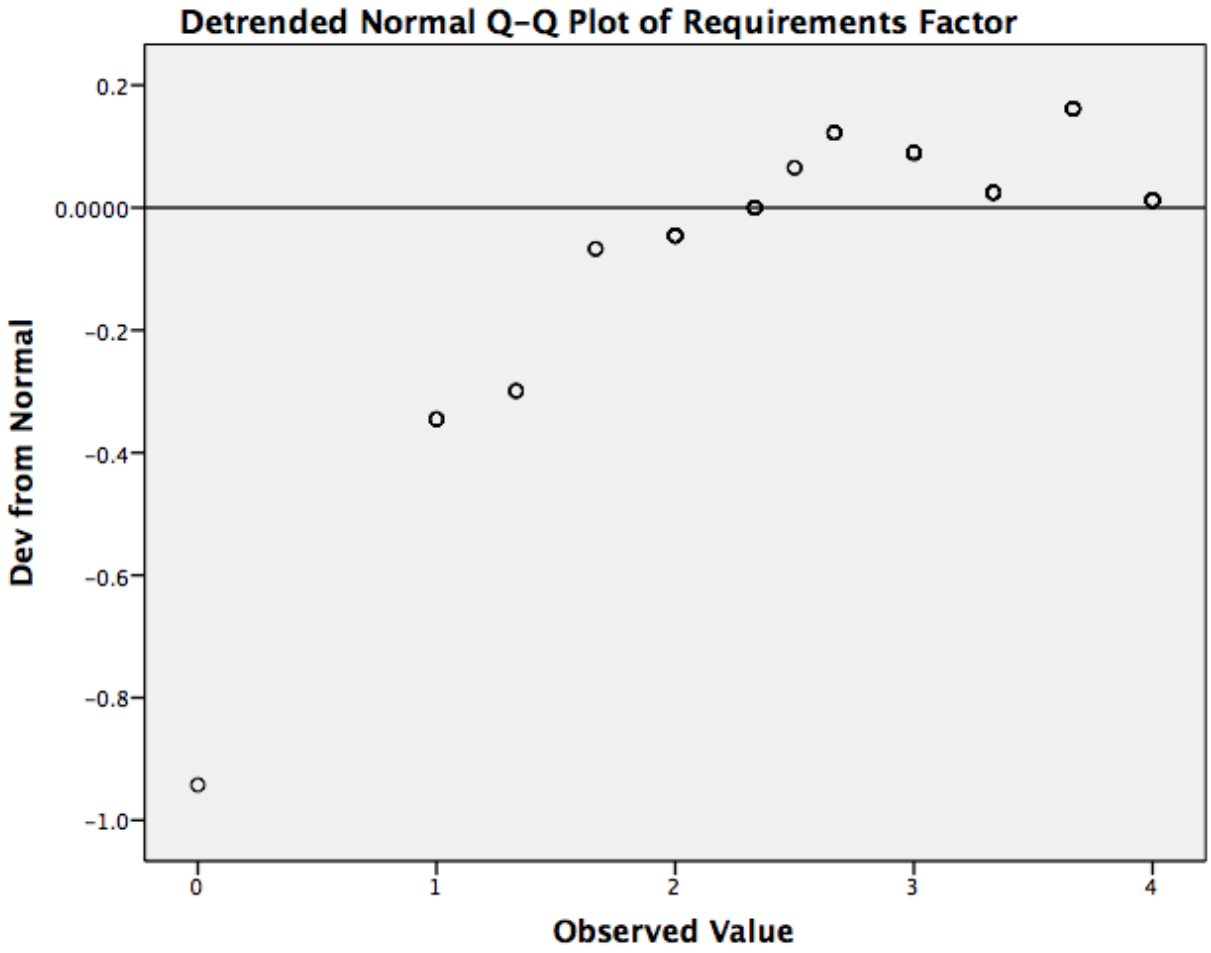


Figure 30. Normal Q-Q Plot of Requirements Factor for Students

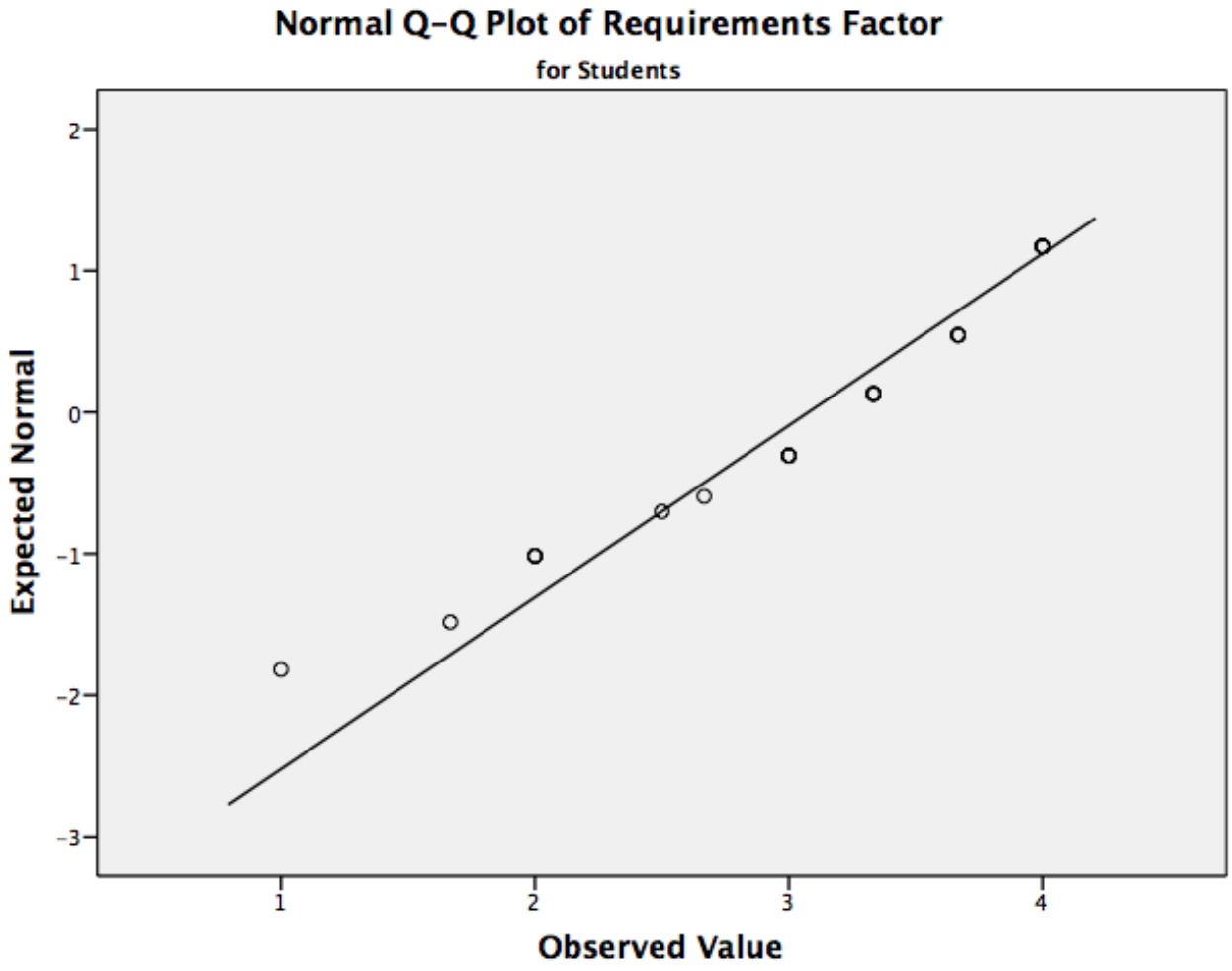


Figure 31. Detrended Normal Q-Q Plot for Requirements Factor for Students

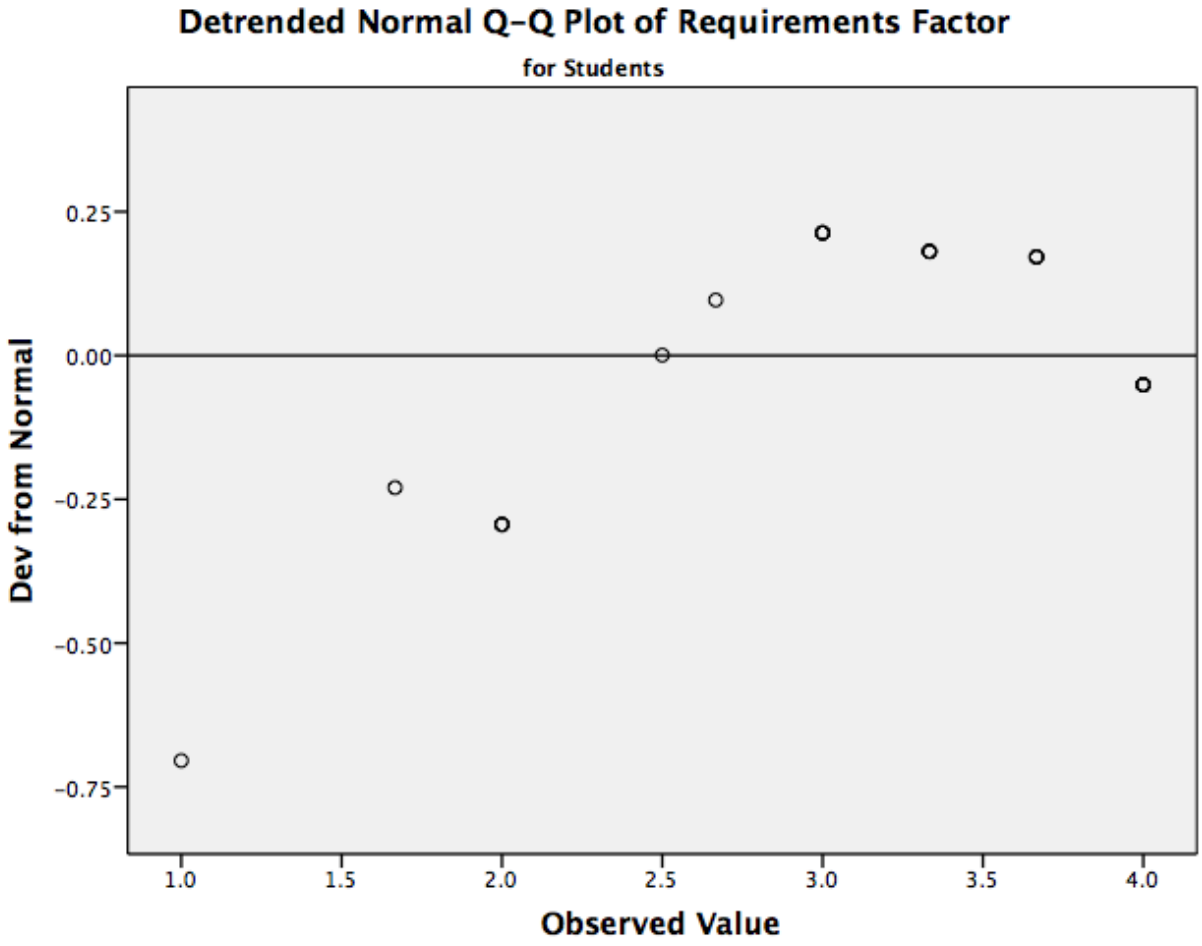


Figure 32. Normal Q-Q Plot for Requirements Factor for Professionals

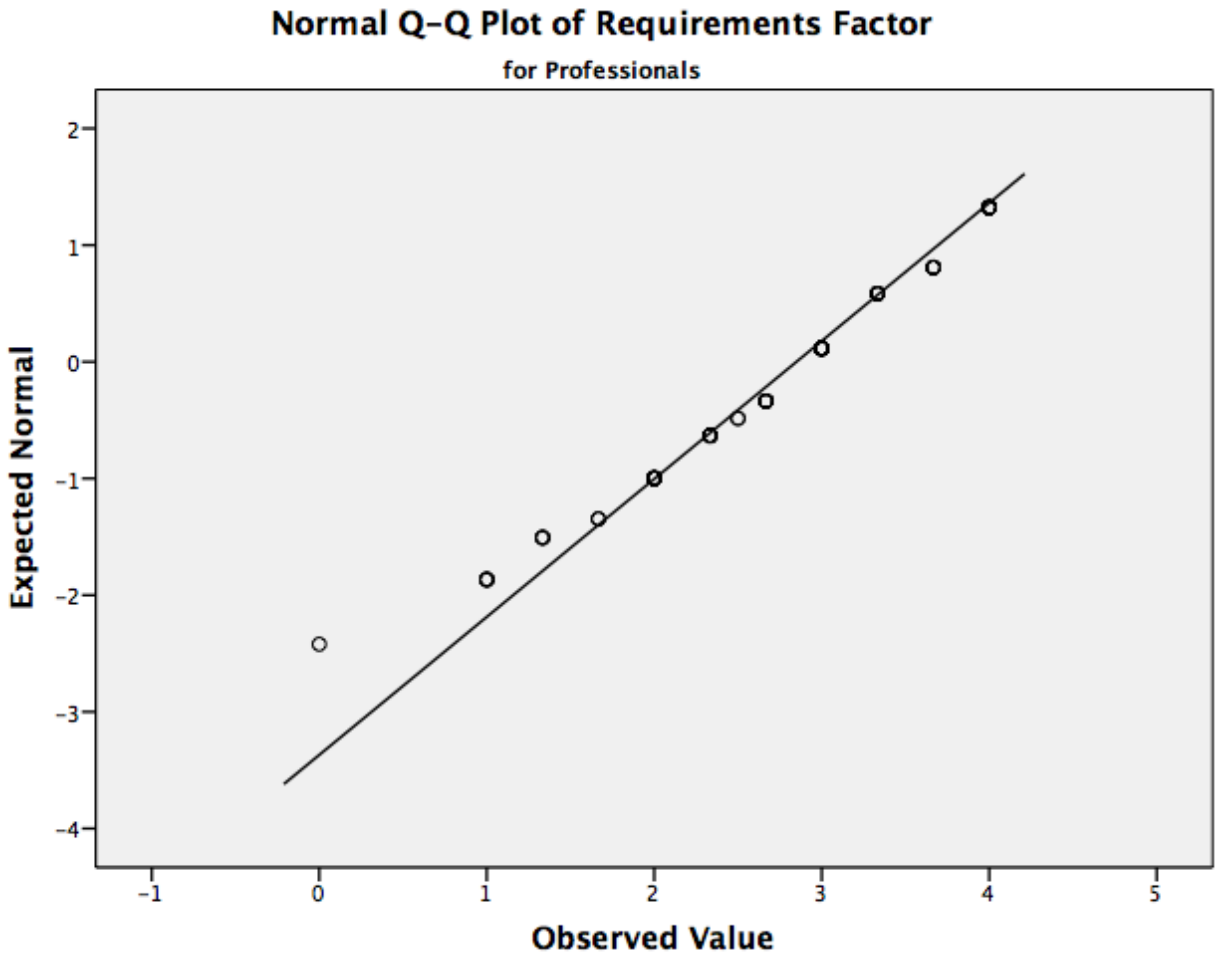


Figure 33. Detrended Normal Q-Q Plot of Requirements Factor for Professionals

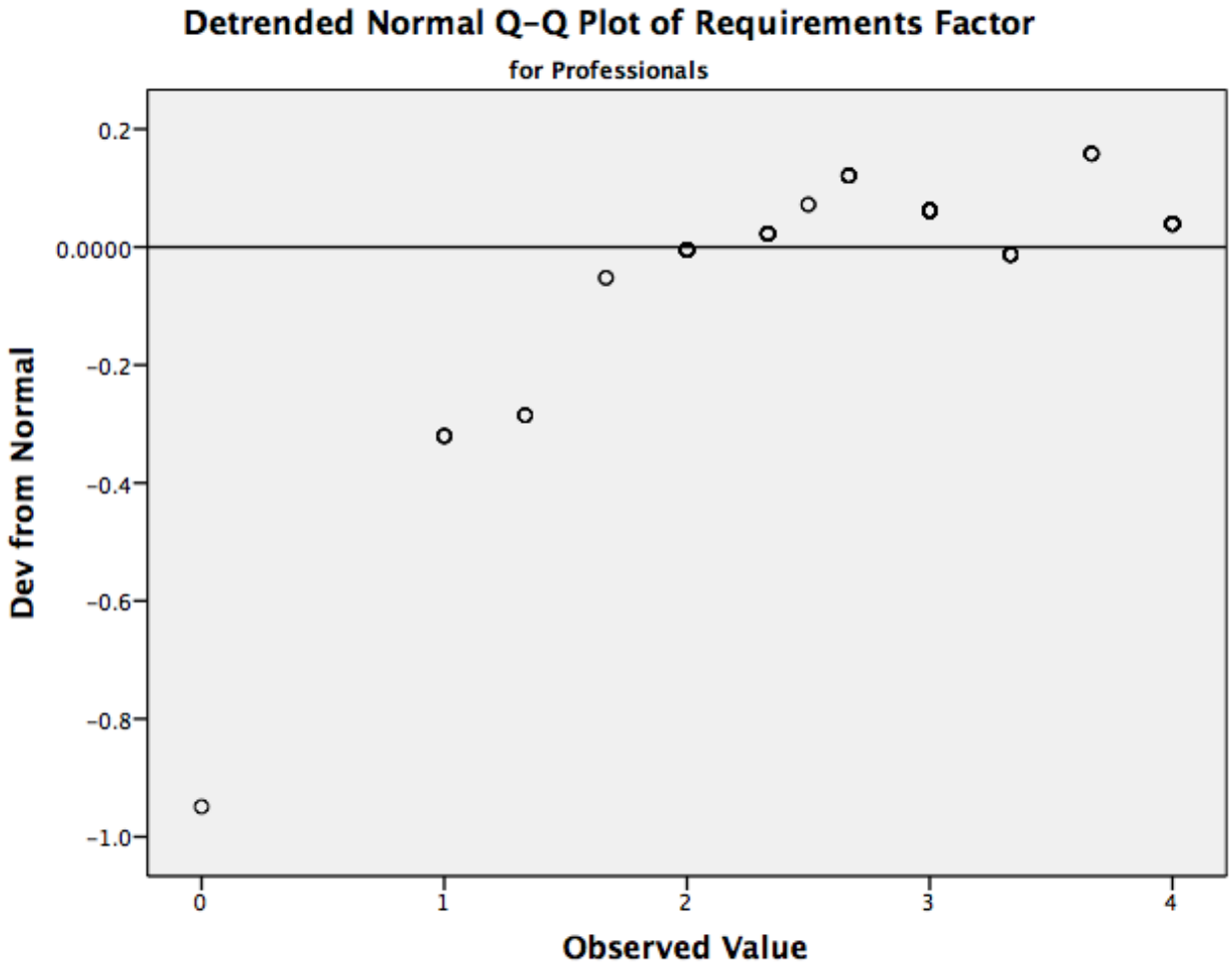


Figure 34. Normal Q-Q Plot of Requirements Factor for School Hired Providers

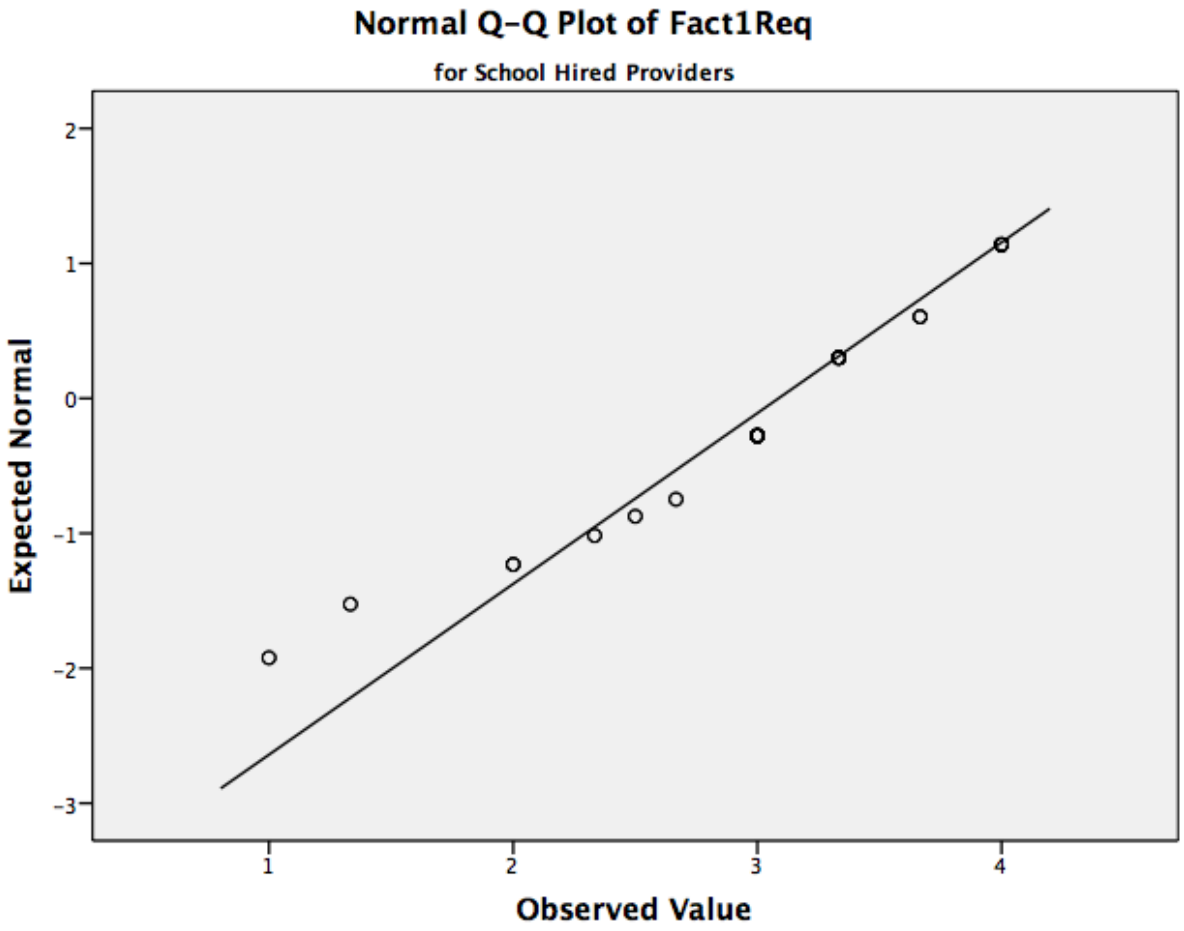


Figure 35. Detrended Normal Q-Q Plot of Requirements for School Hired Providers

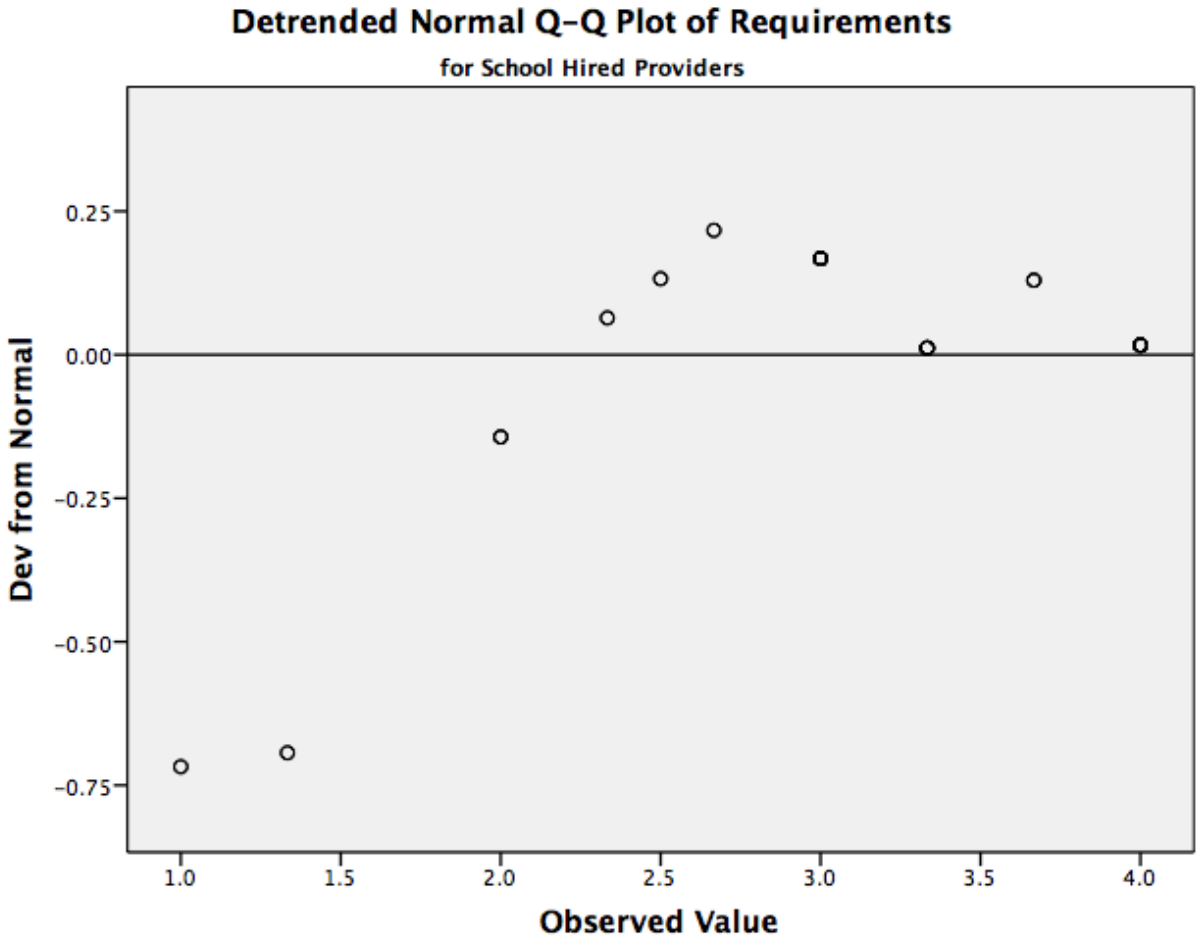


Figure 36. Normal Q-Q Plot of Requirements Factor for Non-School Hired Providers

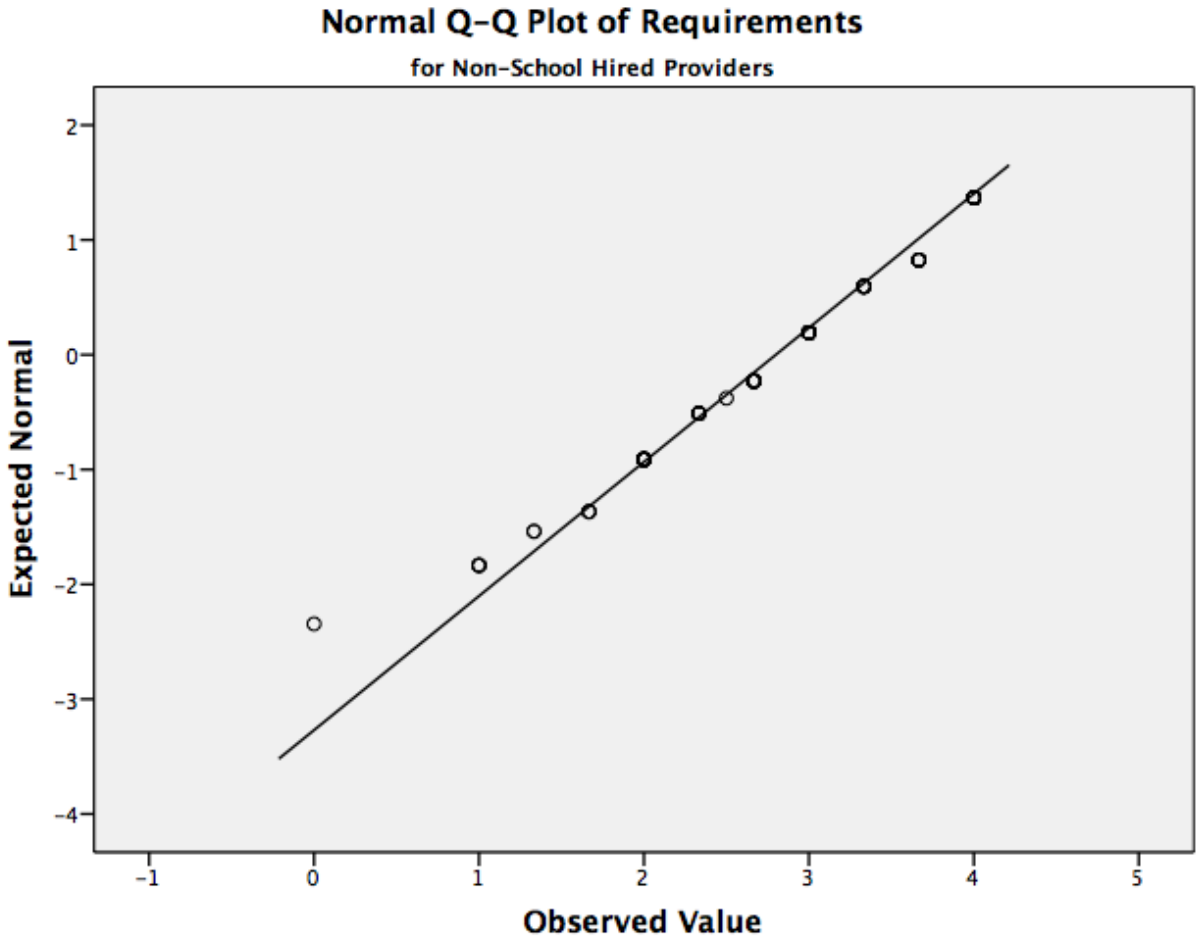
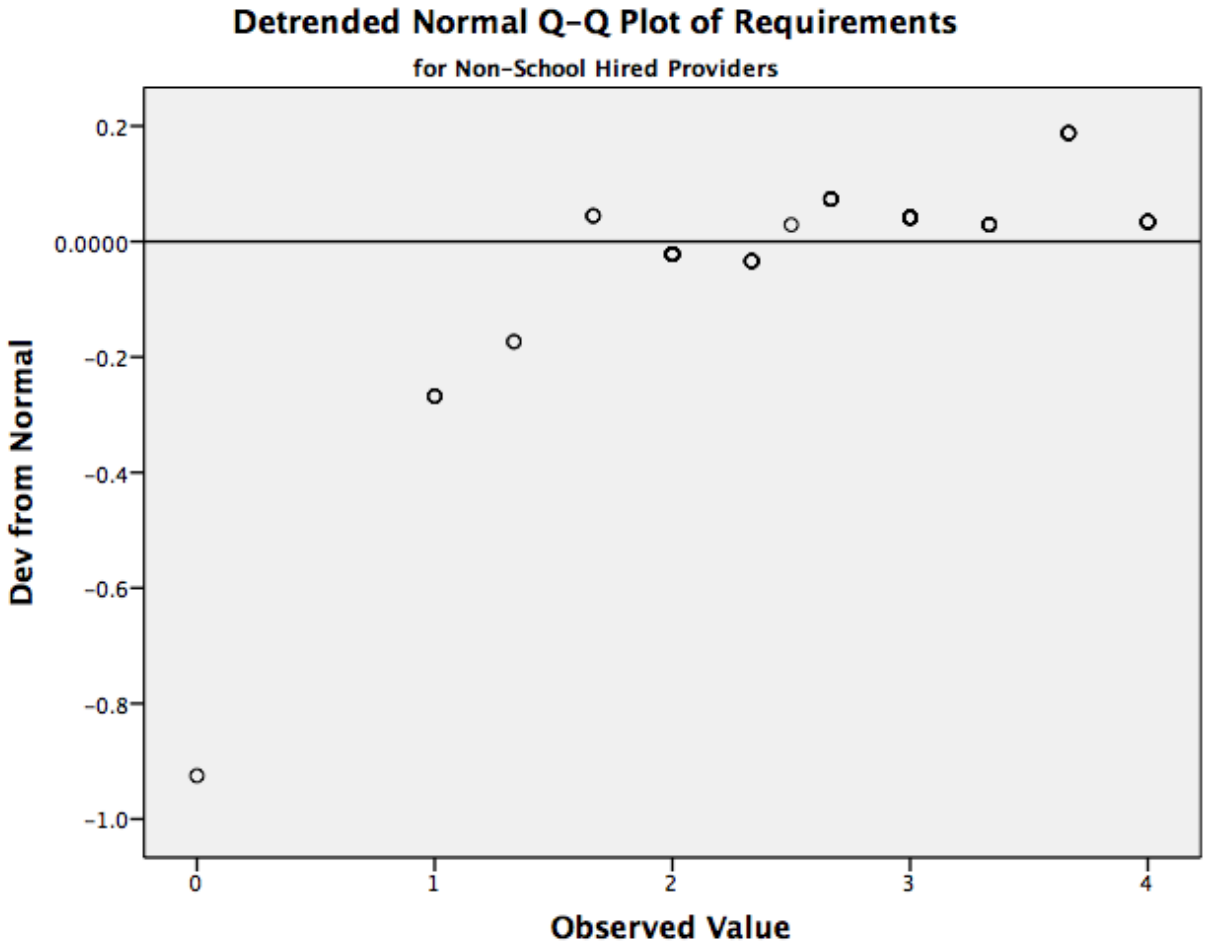


Figure 37. Detrended Normal Q-Q Plot of Requirements for Non-School Hired Providers



APPENDIX A

Recruitment Script for Agency or Department

Hello, I am _____ , a researcher (or research assistant) from the University of Massachusetts, School Psychology program. I was provided your contact information by _____ who indicated that your Agency/Department might be interested in participating in our research. We are investigating school-based behavioral health providers' attitudes towards evidence-based practices (EBPs). Our hope is that the results of this study will help to better inform research on social-emotional interventions as well as improve the quality and access of services provided to students. The results of this survey will be kept completely anonymous. Any formal write-up of the results of this experiment will not provide details that will be traceable to your staff. The survey will take about 20 minutes to complete, for each participant. Participation is completely voluntary. Will your team participate in this study?

APPENDIX B

Recruitment Script for Individual

Hello, I am _____ , a researcher (or research assistant) from the University of Massachusetts, School Psychology program. I was provided your contact information by _____ who indicated that you might be interested in participating in our research. We are investigating school-based behavioral health providers' attitudes towards evidence-based practices (EBPs). Our hope is that the results of this study will help to better inform research on social-emotional interventions as well as improve the quality and access of services provided to students. The results of this survey will be kept completely anonymous. Any formal write-up of the results of this experiment will not provide details that will be traceable to you. The survey will take about 20 minutes of your time. Your participation is completely voluntary. Will you participate in this study?

APPENDIX C

Agency/Department Permission Letter

I _____ give Erik Maki and his research team permission to survey the _____ Department staff for the purposes of his research regarding school-based behavioral health providers' attitudes towards evidence-based practices. I understand that this information will be used for his dissertation and for potential publication(s). To obtain the maximum amount of participants, he may attend the _____ Department meetings on a date that we both find mutually convenient. He may also survey staff members individually, at those particular staff members' convenience. This permission will last until December 30th, 2015.

_____

(Signature, Role, and Date)

APPENDIX D

SURVEY TOOL

Dear Participant,

We are conducting a study of school-based behavioral health providers and their attitudes towards evidence based practices. As a school-based behavioral health provider, we are seeking your input. A team of researchers, led by Erik Maki, a School Psychology doctoral candidate from the College of Education and Human Development at the University of Massachusetts at Boston, are seeking your participation in this study. The information used in this study will be used for my dissertation and future presentations and publications. Please read this form and feel free to ask questions.

Your participation in this study includes completion of a paper survey that will take approximately 20 minutes. We are seeking your perspective on evidence based social-emotional-behavioral interventions in schools. All of the information that you provide for this study will be kept anonymous and confidential. The information gathered for this project will be presented in the aggregate, ensuring that your information will not be personally identifiable. Information gathered for this project will be stored in a locked file cabinet and only the research team will have access to the data.

There are minimal risks expected for participating in this survey. Your participation in this study is voluntary. You may decline to answer any questions while you are taking the survey. You may also choose to quit the survey at any time. Incomplete surveys will not be used in the study. However, due to the anonymous nature of the survey, once you submit your survey, you will be unable to withdraw your responses. If you have any questions or concerns about your rights or participation in this study, please contact me at Erik.Maki001@umb.edu or my advisor at 617-287-7624.

You have the right to ask questions about this research at any time during the study. If you have any questions or concerns about your rights as a research participant, please contact a representative of the Institutional Review Board (IRB), at the University of Massachusetts, Boston, which oversees research involving human participants. The Institutional Review Board may be reached at the following address: IRB, Quinn Administration Building-2-080, University of Massachusetts Boston, 100 Morrissey Boulevard, Boston, MA 02125-3393. You can also contact the Board by telephone or e-mail at (617) 287-5370 or at human.subjects@umb.edu.

By completing this interview, you are indicating that you voluntarily agree to participate in this study and that you are over the age of 18.

Thank you for your time and participation.

Erik D. Maki
Doctoral Candidate
Primary Investigator
Erik.Maki001@umb.edu

Dr. Melissa Pearrow
Dissertation Chair
617-287-7624

In this section of the survey, you will be providing some details about yourself. Certain questions will ask about evidence-based practices, or EBPs. For this study, evidence-based practice refers to interventions that are supported by empirical research, and those that include the integration of the best available research with clinical expertise in the context of patient characteristics, culture, and preferences.

Provider Demographics

Employment

In this section, please provide details about your current employment. Please circle one choice or write your answer in the blanks below.

1) What is your employer? (Please Circle One)

1. School District
2. Community Agency (such as hospital, clinic, etc.)
   a. If Community Agency, please circle one:
      i. For Profit
      ii. Not-For-Profit
3. Other:_____

2) How long have you been in your current role/ position with this school/agency?:

(Approximately) _____ months

- Do you typically work summers? (Circle one)
  - Yes
  - No

3) Where do you spend the majority of your day working? (Circle One):

1. Mobile services (e.g. In-Home Therapy, Mobile Crisis, etc.)
2. School
3. Community (e.g. private practice)
4. Outpatient Setting
5. Day Treatment/ Partial Hospital setting
6. Acute (Inpatient/ Residential)

4) How are you paid? (Circle one)

1. Fee for service
2. School Funded Salary (e.g. School Psychologist, Guidance Counselor, etc.)
3. Agency Funded Salary
4. Blend (Please describe:_____)
5. Other:_____

5) What is your primary discipline? (Circle One)

1. Applied Behaviorism
2. Clinical Psychology
3. Counseling Psychology
4. Guidance Counseling
5. Marriage and Family
6. Nursing
7. Psychiatrist
8. School Psychology
9. Social Work
10. Other:_____
11. Combined (e.g. Counseling and School Psychology). Please describe:_____

6) Does your employer have written policies promoting the use of evidence-based practices with your clients/students?

1. Yes
2. No
3. I don't know

7) Are you currently assigned to a school that utilizes universal behavioral health screening (e.g. BIMAS, BESS, Columbia Teen Screen, etc.)?

1. **Yes**
2. **No**
3. **I don't know**

Professional Activities

In this section, please provide details about your current activities within the Boston Public Schools.

8) Number of schools to which you are assigned weekly:

_____ schools

9) Average number of hours per week working in a school setting:

_____ hours

10) What percentage of your time do you spend at each grade level? (Please only consider when you are physically in a school.):

- Early Childhood (Pre-K – K): _____%/week
- Elementary School (1st -5th): _____%/week
- Middle School (6th-8th): _____%/week
- High School (9th-12th): _____%/week

11) Average number of schools per week in which you provide social, emotional, or behavioral health interventions:

_____ schools

12) Average number of hours per week providing social, emotional, or behavioral health interventions within a school or schools:

_____ hours

13) Average number of scheduled meetings per week you attend with other school professionals in the school setting for the purpose of treatment planning and/or problem solving around students' needs (such as Student Support Team or equivalent):

_____meetings

14) Average number of hours per week spent researching and planning interventions for use with students:

_____hours

15) Average number of hours per week evaluating the outcomes of behavioral health services in place and/or monitoring progress

_____hours

16) Number of trainings attended within the past calendar year (from today's date) related to Evidence Based Practices[1]:

_____trainings paid for by self
_____trainings paid for by employer
_____trainings paid for by other funding stream

17) Average number of hours per week in which you implement Evidence Based Practices:

_____hours

Training/Orientation

In this section, please provide details about your professional training and theoretical orientation.

18) Highest educational level achieved (Circle One):

1. Some Graduate School
2. Masters Degree
3. Specialist Degree
4. Masters + Specialist degree
5. Multiple Masters degrees
6. Doctorate degree
7. Other:_____

19) Major of your highest degree (Circle One):

1. Behavior Analysis
2. Education
3. Guidance Counseling
4. Medicine
5. Nursing
6. Clinical Psychology
7. Counseling Psychology
8. School Psychology
9. Social Work
10. Other:_____

20) Professional Status (Circle One)

1. Graduate Student
2. Non-licensed Professional
3. Licensed Professional (PhD, LICSW, LCSW, LMHC, etc)

21) Primary theoretical orientation (Please circle one in each of these three sections)

…of your training program	**…of your employer**	**…of your own**
1. Behavioral	11. Behavioral	21. Behavioral
2. Cognitive	12. Cognitive	22. Cognitive
3. Cognitive-Behavioral	13. Cognitive-Behavioral	23. Cognitive-Behavioral
4. Eclectic	14. Eclectic	24. Eclectic
5. Family Systems	15. Family Systems	25. Family Systems
6. Systems/ Ecological	16. Systems/ Ecological	26. Systems/ Ecological
7. Humanistic	17. Humanistic	27. Humanistic
8. Psychodynamic	18. Psychodynamic	28. Psychodynamic
9. Not applicable	19. Not applicable	29. Not applicable
10. Other:_____	20. Other:_____	30. Other:_____

22) Number of years in current profession:

_____ years

23) Number of years working in mental health/behavioral health:

_____years

24) Number of years working in education and schools

_____years

25) Number of years working in a combined professional role within education and mental health

_____years

26) Did you receive training around Evidence Based Practices in your graduate education?

1. Yes
2. No

27) Within the past year, have you received training around Evidence Based Practices through your current employer?

1) Yes
2) No

28) Within the past year, have you attended trainings, outside of those offered by your employer, about Evidence Based Practices?

1) Yes
2) No

Personal Characteristics

In this section, please provide details about you.

29) Age:

_____ years old

30) Gender (Circle one)

1. Female
2. Male
3. Transgender
4. Other:_____

31) Race (Circle one)

1. African American
2. Asian
3. Caucasian
4. Hawaiian/Pacific Islander
5. Hispanic
6. Multi-Race/Non-Hispanic
7. Native American
8. Other:_____

The following questions ask about your feelings about using new types of therapy, interventions, or treatments. Manualized therapy 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/predetermined way. Evidence-based practice refers to interventions that are supported by empirical research, and those that include the integration of the best available research with clinical expertise in the context of patient characteristics, culture, and preferences. .

For questions 1-8: Circle the number indicating the extent to which you agree with each item using the following scale:

0	1	2	3	4
Not at all	**Slight extent**	**Moderate extent**	**Great extent**	**Very great extent**

1. I like to use new types of therapy/interventions to help my clients/students.....0 1 2 3 4

2. I am willing to try new types of therapy/interventions even if I have to follow a treatment manual 0 1 2 3 4

3. I know better than academic researchers how to care for my clients/students... 0 1 2 3 4

4. I am willing to use new and different types of therapy/interventions developed by researchers 0 1 2 3 4

5. Research based treatments/interventions are not clinically useful 0 1 2 3 4

6. Clinical experience is more important than using manualized therapy/treatment ……..0 1 2 3 4

7. I would not use manualized therapy/interventions 0 1 2 3 4

8. I would try a new therapy/intervention even if it were very different from what I am used to doing 0 1 2 3 4

0	1	2	3	4
Not at all	**Slight extent**	**Moderate extent**	**Great extent**	**Very great extent**

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. it was intuitively appealing? 0 1 2 3 4

10. it "made sense" to you? 0 1 2 3 4

11. it was required by your supervisor? 0 1 2 3 4

12. it was required by your agency? ……...0 1 2 3 4

13. it was required by your state? 0 1 2 3 4

14. it was being used by colleagues who were happy with it? ……...0 1 2 3 4

15. you felt you had enough training to use it correctly? ……...0 1 2 3 4

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

16. your clients/students wanted it 0 1 2 3 4

17. you knew more about how your clients/students liked it 0 1 2 3 4

18. you knew it was right for your clients/students ……..……..0 1 2 3 4

19. you had a say in which evidence-based practice was used 0 1 2 3 4

20. you had a say in how you would use the evidence-based practice 0 1 2 3 4

21. it fit with your clinical approach 0 1 2 3 4

22. it fit with your treatment philosophy 0 1 2 3 4

==========

For questions 23-50: Circle the number indicating the extent to which you agree with each item using the following scale:

0	1	2	3	4
Not at all	**Slight extent**	**Moderate extent**	**Great extent**	**Very great extent**

23. Evidence-based practice detracts from truly connecting with your clients /students ……..... 0 1 2 3 4

24. Evidence-based practice makes it harder to develop a strong working alliance ..... …….0 1 2 3 4

25. Evidence-based practice is too simplistic……..0 1 2 3 4

26. Evidence-based practice is not useful for clients/students with multiple problems …….....0 1 2 3 4

27. Evidence-based practice is not useful for families with multiple problems. 0 1 2 3 4

28. Evidence-based practice is not individualized treatment 0 1 2 3 4

29. Evidence-based practice is too narrowly focused 0 1 2 3 4

30. I prefer to work on my own without oversight... ……..0 1 2 3 4

31. I do not want anyone looking over my shoulder while I provide services 0 1 2 3 4

32. My work does not need to be monitored. 0 1 2 3 4

33. I do not need to be monitored 0 1 2 3 4

34. I am satisfied with my skills as a therapist/case manager 0 1 2 3 4

35. A positive outcome in therapy is an art more than a science ……0 1 2 3 4

Circle the number indicating the extent to which you agree with each item using the following scale:

0	1	2	3	4
Not at all	**Slight extent**	**Moderate extent**	**Great extent**	**Very great extent**

36. Therapy is both an art and a science …….0 1 2 3 4

37. My overall competence as a therapist is more important than a particular approach ... …….0 1 2 3 4

38. I don't have time to learn anything new 0 1 2 3 4

39. I can't meet my other obligations 0 1 2 3 4

40. I don't know how to fit evidence-based practice into my administrative work ..... …….0 1 2 3 4

41. Evidence-based practice will cause too much paperwork ……0 1 2 3 4

42. Learning an evidence-based practice will help me keep my job 0 1 2 3 4

43. Learning an evidence-based practice will help me get a new job 0 1 2 3 4

44. Learning an evidence-based practice will make it easier to find work 0 1 2 3 4

45. I would learn an evidence-based practice if continuing education credits were provided..... 0 1 2 3 4

46. I would learn an evidence-based practice if training were provided 0 1 2 3 4

47. I would learn an evidence-based practice if ongoing support was provided 0 1 2 3 4

48. I enjoy getting feedback on my job performance 0 1 2 3 4

49. Getting feedback helps me to be a better therapist/case manager 0 1 2 3 4

50. Getting supervision helps me to be a better therapist/case manager ……0 1 2 3 4