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Current Practices in Functional Behavioral Assessment: A National Survey of School Psychologists

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CURRENT PRACTICES IN FUNCTIONAL BEHAVIORAL ASSESSMENT: A NATIONAL SURVEY OF SCHOOL PSYCHOLOGISTS

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This study surveyed a national sample of school psychologists (n = 287) about their practices and perceptions of Functional Behavioral Assessment (FBA) in the school setting. This study investigated how school psychologists across the United States are interpreting legal mandates and whether schools are venturing beyond the nonspecific requirements established by the Individuals with Disabilities Education Act (IDEA). School psychologists were surveyed regarding demographic characteristics, familiarity with FBA, training in FBA, typical involvement in FBA, individuals responsible for conducting FBA, reasons for conducting FBA, data collection methods, and specific content of FBA.

Results reveal that over 94% of respondents indicate that they perceive themselves to be "very familiar" with FBA. Although nearly 86% of respondents report that they honor the mandates of the IDEA, less than 70% of respondents indicate that they serve on a collaborative team of professionals to implement FBA, as recommended by best practices in the literature.

Over 95% of respondents have obtained post-graduate school training in FBA, with the primary sources of training consisting of: in-service training provided by the school system, independent reading, and training provided by state and/or national organizations. Results indicated that there was no meaningful relationship between the

typical level of involvement in the FBA process and the following variables: a) sex, b) highest degree earned, c) years of experience, d) region employed, e) grade levels of the students served, f) number of students served, or (g) socioeconomic status of the students served. Finally, there appears to be considerable variability in "typical" FBA practices, particularly with regard to data collection methods, reasons for which FBA is conducted, and content included in FBA.

A primary limitation of this investigation consists of the fact that the data supplied by the participants were not confirmed through the use of objective methods of data collection. It was recommended that future research examine current practices in FBA through the use of more objective data, explore the most effective models of training, and further investigate the barriers to the use of FBA in the school setting.

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CHAPTER I

INTRODUCTION

The principal has just come to the school psychologist's office, frantically requesting help. A student in special education, Joey, is currently hiding under his chair in his classroom. Although this is the third time this week that Joey's behavior has been inappropriate in the classroom, he is not acquainted with the school psychologist. When the school psychologist arrives, the student has been escorted to the school counselor's office where he is threatening to throw chairs and making vague threats to hurt himself. The school counselor is moving chairs out of her office as quickly as possible. The student's Therapeutic Support Staff (TSS) worker is not able to alleviate his behavior and is clearly frustrated with him. Joey's divorced parents both arrive at the school after being informed of the situation. It is discovered that the student's medication was recently altered for the second time in the past month, and Joey's mother displays the bite marks on her arm inflicted just that morning. It is determined that Joey's parents will take him home for the remainder of the day. As they are leaving, Joey's father is overheard telling him that they will go to McDonald's on the way home. Joey appears happy as he walks out of the school.

After they leave, the principal convenes a meeting including the school psychologist and the school counselor. He is concerned about Joey's potential for danger to himself and/or others, and is openly questioning whether Joey is currently placed in the appropriate educational setting. He hypothesizes that Joey may be more successful in a self-contained classroom that services students with Emotional and Behavioral Disabilities, and if his behavior continues to be dangerous, placement in an alternative

educational setting. Joey is identified as a student with a speech and language impairment but does not have any other identified needs at this time. He transferred to this school two weeks ago after participating in the local hospital's Day Treatment Program after engaging in violent behavior towards his mother. A school-based psychological evaluation has been requested but has not been completed due to the recency of the request. A recent psychological report completed by his base service agency indicates that his cognitive ability and achievement scores are commensurate and fall within the average range. He has been diagnosed as a child with Bipolar Disorder, Oppositional Defiant Disorder, and Attention-Deficit/Hyperactivity Disorder. He has been hospitalized on two prior occasions for similar home problems. However, his previous school reports indicate that while enrolled there, no behavioral difficulties were documented.

Situations such as the one described above, based on a real incident, occur as a typical component of a school psychologist's workload. It is a school psychologist's responsibility to work with and treat these students. Knoster and McCurdy (2002) argue that school psychologists are in a prime position to facilitate the design and delivery of comprehensive behavior intervention plans based on information gleaned from a Functional Behavioral Assessment (FBA), and maintain that FBA should be integrated into the special education decision-making process.

Overview of Functional Behavioral Assessment

One of the primary problems faced by educators today is the safety of their students. Sugai and Horner (1999) found that 40.4% of discipline referrals are accounted for by 5% of the students. This statistic suggests that a small number of students are

exhibiting chronic behavioral concerns that are, or have the potential to, disrupt the academic and social functioning of many. A significant portion of time spent by teachers and administrators is spent dealing with these disruptive students and addressing the consequences of their behavior.

While schools have traditionally relied on reactive strategies to deal with disruptive behavior (Colvin, Sugai, & Kameenui, 1993), a more innovative approach includes developing proactive procedures to address problem behavior in its early stages, before individual students suffer long-term consequences. FBA is one such proactive strategy that has received widespread attention in the last few years. FBA, behavioral assessment, and functional analysis are terms consistently seen throughout the literature, although few authors take the time to discriminate between the terms (Crone & Horner, 1999; Sugai & Horner, 2002; Sterling-Turner, Robinson, & Wilczynski, 2001). Behavioral assessment consists of collecting data on a student's behavior through the use of structured interviews, direct observation, and behavioral rating scales (Shriver, Anderson, & Proctor, 2001). FBA, in contrast, is an assessment procedure that strives to discover the reason for, or function of, the problem behavior in an attempt to link specific environmental variables to effective intervention strategies (Gresham, 2004; Sterling-Turner et al., 2001; Witt, Daly, & Noell, 2000). The proposed function of the problem behavior is coherently described in a functional hypothesis statement; a succinct summary of the analyzed data that addresses the relationships between the setting events, antecedents, and consequences of the problem behavior (Jolivette, Barton-Arwood, & Scott, 2000). Functional analysis, a subcategory of the larger FBA process, entails the direct and systematic manipulation of variables in an attempt to verify the functional

hypothesis statement (Gresham, 2004; Gresham, Quinn, & Restori, 1999; Martin & Pear, 1999).

FBA is based on B.F. Skinner's principles of operant conditioning, which, generally speaking, state that behavior is reinforced by naturally occurring forces operating in the environment (Skinner, 1969). A discriminative stimuli, or antecedent, may increase the likelihood of a behavior occurring. A consequence, in turn, may be positively or negatively reinforced (producing an increase in the frequency of that behavior), or punished (producing at least a temporary decrease in the behavior). Skinner (1969) argues the concepts described by operant conditioning impact all of our significant responses in everyday life. The focus of FBA is to discover, through a thorough, multi-modal assessment, the antecedents of behavior and the reinforcement of that behavior. It is surmised that one does not continue behaviors which do not produce some benefit, albeit subtle or incongruous to the observer. This perspective would posit that the child who repeatedly engages in self-injurious behavior is receiving a benefit which is greater to him/her than the cost of the behavior (i.e., the injury/pain).

The Individuals with Disabilities Educational Act of 2004 (IDEA 2004), also known as Public Law 109-446, states that "The IEP Team must (i) in the case of a child whose behavior impedes the child's learning or that of others, consider the use of positive behavioral interventions and supports, and other strategies, to address that behavior" (§ 300.24 [a] [2] [i]). IDEA (2004) mandates that FBAs are legally required whenever students in special education whose behavior is determined to be a manifestation of their disability engages in behavior that violates school code and a) is suspended or placed in an alternative setting for more than 10 consecutive days or amounts to a change in

placement, or b) is placed in an interim alternative educational setting for not more than 45 days when his/her misconduct involves weapons, controlled substances, illegal drugs, or serious bodily injury upon another person. As indicated in § 300.53 (d) (ii) (3) of IDEA (2004), an FBA is not required if a child with a disability has been removed from his/her current placement for 10 school days or less in that school year "if services are not provided to a child without disabilities who has been similarly removed." It should be noted that these mandates were originally introduced in the previous version of the IDEA (1997).

It is generally conceded in the literature that FBAs have the potential to benefit any student displaying significant behavioral concerns, regardless of their placement in the special education program, their likelihood of undergoing a change in educational setting, or their likelihood of bringing a weapon or drugs to school (Ingram, Lewis-Palmer, & Sugai, 2005; Knoster & McCurdy, 2002). Knoster and McCurdy (2002) state, "Assessment and intervention for students who display behavior problems should begin at the onset of problems" (p. 1011). They further assert that FBA can be used prior to the initial evaluation of students by the IEP Team, as FBA can be used as a pre-referral intervention. Because school psychologists are typically trained in the FBA process, it is logical to think that school psychologists should play a significant role in determining when FBAs are appropriate, collecting data to be used in the FBA process, working in a collaborative environment to conduct the FBA, and aiding teachers or parents in using the obtained information in a meaningful way.

A review of empirical literature indicates that it is difficult to write a conclusive "best practices" manual detailing how FBA should be most properly conducted in the

school setting, as researchers continue to postulate various methods with which to most effectively implement FBAs in the school setting (Deno, 1992; Fuchs & Fuchs, 1990; Jolivette et al., 2000; Mash & Terdal, 1997; Sterling-Turner et al., 2001; Yell & Drasgow, 2000). However, proposed FBA techniques often illustrate components that are similar or compatible. Common components of FBA described in the literature suggest that FBA is a collaborative process that should be conducted in a systematic manner. It should be emphasized that while conducting an FBA is a process, a Behavioral Intervention Plan (BIP) is the product. A completed FBA is of limited value without a carefully designed BIP to aid teachers in fostering positive behavior within the classroom environment.

Statement of the Problem

The Individual with Disabilities Educational Act of 2004 mandates that FBAs are legally required whenever a student in special education: a) is suspended or placed in an alternative setting for more than 10 consecutive days or amounts to a change in placement, b) is placed in an interim alternative educational setting for 45 days when his/her misconduct involves weapons or drugs, or c) when a due process hearing officer places a student in an interim alternative educational setting for behavior that is dangerous to him/herself or others (§ 615(k)(1)(F)). However, a broad interpretation of the IDEA indicates that FBAs should be conducted for any student displaying significant behavioral concerns, which includes both special education and general education students. School psychologists are in a prime position to determine when FBAs are appropriate, aid in the collection of data to be used in the FBA process, foster a collaborative environment to conduct the FBA, and assist the teachers or parents in using

the information obtained in a meaningful way. There is a paucity of research indicating whether other school professionals, such as school counselors or social workers, have received training in the FBA process.

Despite this assertion that school psychologists can play a crucial role in fostering the effective use of FBA, research indicates that school districts are struggling to meet the minimum standards of FBA as mandated by the IDEA (1997) and its revised version, the IDEA (2004). Drasgow and Yell (2001) conducted a national review of due process hearings that directly involved FBAs from the time that the IDEA (1997) became law until August 2000. They found 14 state level due process hearings in which the primary dispute involved an FBA conducted by a school district. Ninety-four percent (13 out of 14 cases) of the rulings favored the parents. In 11 of the cases, the school districts did not conduct an FBA when it was required. In three hearings, hearing officers ruled against school districts because the IEP team conducted an inadequate FBA. In one case, the school psychologist had conducted a single hour-long classroom observation during a class party, a grossly inadequate assessment of the student's behavior. Thus, Drasgow and Yell indicated that "the primary difficulty school districts face is complying with the procedural requirements for conducting an FBA. School districts are still challenged by the requirements 3+ years after the passage of the IDEA '97. It appears that although the IDEA '97 requires that the IEP team must conduct an FBA, in most of these cases the IEP team simply did not do it" (p. 246). It should be noted, however, that the conclusions formulated by Drasgow and Yell may not be representative of a national problem. The possibility should be considered that these 14 due process hearings reflect anomalies in the practice of FBA, rather than common occurrence. Although numerous researchers

have proposed definitions of FBA (Gresham, 2004; Horner & Carr, 1997; Witt et al., 2000), proposed methods to effectively implement FBA (Deno, 1992; Fuchs & Fuchs, 1990; Jolivette et al., 2000; Mash & Terdal, 1997; Sterling-Turner et al., 2001; Yell & Drasgow, 2000), and described the consequences of not conducting FBA in compliance with the IDEA (1997) and the IDEA (2004) (Yell & Drasgow, 2000; Yell & Rozalski, 2000; Van Acker, Boreson, Gable, & Potterton, 2005), the extent to which FBA is used, or used with any degree of fidelity, has not been empirically studied. Until it is clearly understood how school professionals are interpreting the law, little can be done to remediate the weaknesses of current FBA practices.

Implications for Education

Obtaining an understanding of how educators are currently interpreting the legal mandates outlined in the IDEA (1997) and the IDEA (2004) is crucial to understanding the strengths and weaknesses of the FBA process in our schools. While it is acknowledged that many school professionals are not appropriately trained in FBA (LaRocque, 2004; Myers & Holland, 2000; Nelson, Roberts, Rutherford, Mathur, & Aaroe, 1999), a systematic strategy for providing this training has yet to be developed and consistently implemented. Assessing the perceptions and practices of school psychologists regarding FBAs is the first step in the remediation of training deficits, as school psychologists are in a prime position to enhance the knowledge base of their fellow educators. It is anticipated that improved training will result in improved behavioral planning for all students, not simply for those students in the special education program. In addition to raising the overall standards of behavioral planning, the improved training of educators in the FBA process will aid educators in meeting the

requirements mandated by the IDEA, resulting in fewer time-consuming and expensive lawsuits.

Purpose of the Study

The proposed study is designed to be a comprehensive investigation of the knowledge base and current practices of school psychologists in conducting FBAs in the school setting. Current literature pertaining to FBA primarily focuses on specific methods of conducting FBA (Deno, 1992; Fuchs & Fuchs, 1990; Jolivette et al., 2000; Mash & Terdal, 1997; Sterling-Turner et al., 2001; Yell & Drasgow, 2000), the application of FBA on specific populations (such as students with Autism Spectrum Disorder)(Rogers, 2001; Umbreit, 1995), and the potential impact of the IDEA (1997) and the revisions of 2004 on school practice (Drasgow & Yell, 2001; Van Acker et al., 2005; Yell & Rozalski, 2000). The literature suggests that school districts continue to demonstrate a lack of understanding regarding when to appropriately implement FBAs and how to implement them in a manner that is most effective for students demonstrating significant behavioral concerns (Drasgow & Yell, 2001). However, research has not investigated how school psychologists across the United States are interpreting legal mandates and whether schools are venturing beyond the nonspecific requirements established by IDEA. This study is designed to determine what is currently happening in the schools with regards to FBA from the perspective of the school psychologist. The following research questions focus on school psychologists' familiarity with the definition of FBA, school compliance with criteria established by the IDEA (2004) and with those procedures illustrated as acceptable standards within the literature, and school psychologists' overall perceptions of involvement in the FBA process. Due to the

exploratory nature of this study, the majority of the research questions are not accompanied by specific hypotheses. For those research questions that lend themselves to specific hypotheses, a brief description is included.

1. To what degree are school psychologists familiar with the term FBA?

   No specific hypothesis is proposed.

2. To what extent is FBA emphasized in school psychology graduate programs?

   No specific hypothesis is proposed.

3. What sources of post-graduate training are school psychologists receiving in FBA?

   No specific hypothesis is proposed.

4. On average, how many hours of post-graduate training in FBA have school psychologists received?

   No specific hypothesis is proposed.

5. How typically involved in the FBA process do school psychologists perceive themselves to be?

   No specific hypothesis is proposed.

6. Is school psychologists' involvement in the FBA process impacted by:

   a) sex of school psychologist

      No specific hypothesis is proposed.

   b) highest degree earned

      No specific hypothesis is proposed.

   c) years of experience

      No specific hypothesis is proposed.

   d) region employed

No specific hypothesis is proposed.

e) grade levels of the students served

It is hypothesized that those school psychologists who work with students in the higher grades (such as high school) are more likely to be involved in the FBA process (Durant, Krowchuk, Kreiter, Sinal, & Woods, 1999; Forrest, Zychowski, Stuhldreher, and Ryan, 2000).

f) number of students served

No specific hypothesis is proposed.

g) socioeconomic status of students served?

It is hypothesized that involvement in the FBA process will increase as the percentage of students designated as "poor" increases, as research indicates that poverty may be correlated with increased behavioral problems in school-age children (Barbarin et al., 2006; Durant, Krowchuk, Kreiter, Sinal, & Woods, 1999; Forrest, Zychowski, Stuhldreher, and Ryan, 2000).

7. Who is typically responsible for conducting FBAs?

No specific hypothesis is proposed.

8. For what reasons are FBAs typically conducted?

No specific hypothesis is proposed.

9. Who is typically responsible for collecting data for FBA?

No specific hypothesis is proposed.

10. What types of data are typically collected when an FBA is deemed necessary?

No specific hypothesis is proposed.

11a. How often are Behavioral Intervention Plans (BIPs) written to correspond with

the FBA?

No specific hypothesis is proposed.

11b. Are there occasions during which BIPs are designed and included in the IEP and an FBA has not been conducted?

No specific hypothesis is proposed.

12. What is the typical content of an FBA?

No specific hypothesis is proposed.

Definition of Terms

The research questions posed in this study are based on the following operational definitions.

1. *School psychologists*: individuals who are employed full or part-time as a nationally and/or state certified school psychologists in the private or public school system.

2. *functional behavioral assessment (FBA)*: Witt et al. (2000) describe FBA as a "collection of methods for gathering information about antecedents, behaviors, and consequences in order to determine the reasons of behavior. This information is used to design interventions to reduce problem behaviors and to facilitate positive behaviors" (p. 36).

3. *behavioral intervention plan (BIP)*: a proactive and preventative intervention plan developed in order to reduce the occurrence of the inappropriate behavior and replace the target behavior with more appropriate academic and social behaviors (Drasgow & Yell, (2001).

4. *Free appropriate public education (FAPE)*: publicly funded and individually

designed education program developed to meet the unique needs of students with disabilities.

Limitations of the Study

By requesting participants to choose answers from those listed, individual perceptions of the participants are limited as the respondent is prevented from using their own vocabulary to describe specific details regarding their experiences with the FBA process. School psychologists are asked to generalize their perceptions into a "typical" case. This may be extremely difficult, as students requiring an FBA are often far from typical, as their behaviors are often extremely disruptive and/or severe, and are frequently driven by the specific manifestation of their educational disability.

The generalizability of this study may also be impaired by loss of the information obtained from those individuals who do not respond to the survey. For example, if school psychologists are not familiar with the concept of a "functional behavioral assessment", they may be less invested in responding to the survey, resulting in the loss of essential information.

Finally, it should be noted that the survey consists of questions designed to note school psychologists' overall familiarity with FBA, the content of FBA, and the conditions under which an FBA is typically implemented. This study does not assess the overall quality of the FBAs that are being conducted in the school setting. The results are based on self-reports by the respondents, rather than on verifiable sources of data. In addition, the respondents are all members of NASP, which suggests that the findings may not reflect the entire field of school psychology. Finally, it should be noted that only school psychologists who currently work in the private or public school system were

surveyed; those that work in an administrative setting, a hospital, a mental health center, or an academic position were instructed to discontinue taking the survey.

Summary

FBA is a process that was initially mandated by the IDEA (1997), and continues to be legislated with the current revisions of the IDEA (2004). School psychologists have the opportunity to greatly influence the implementation of this powerful assessment tool to benefit all students struggling with behavioral problems, not simply those students eligible for special education services. However, it is unclear how school professionals are currently conducting FBAs, as the literature primarily focuses on specific methods of conducting FBA, the application of FBA on specific populations (such as those students with Autism Spectrum Disorder), and the potential impact of the IDEA (1997) and the revisions of 2004 on school practice. The present study addresses the need to investigate how FBAs are actually conducted, who is conducting them, and with whom. In addition, this study examines variables which may be associated with a school psychologist's familiarity with FBA, such as breadth of experience, type of population with whom they work, and number of students served.

CHAPTER II

LITERATURE REVIEW

It is generally accepted that students' ability to succeed in the school environment is greatly impacted by their ability to maintain appropriate behavior. While the majority of school-based discipline referrals are for mild to moderately disruptive behaviors (e.g., inappropriate talking, off-task behaviors, or leaving seat without permission), severe behavioral problems (e.g., aggressive behavior or destruction of property) demonstrate a considerable psychological and physical threat to students (Skiba, Peterson, & Williams, 1997). Sugai and Horner (1999) found that 40.4% of discipline referrals are accounted for by 5% of the students. This suggests that a small number of students are exhibiting chronic behavioral concerns that are, or have the potential to, disrupt the academic and social functioning of many. A significant portion of time by teachers and administrators is spent dealing with these disruptive students and addressing the consequences of their behavior. It is often the most behaviorally challenged students who are referred for special education services. If already receiving special education services, these students are more likely to be viewed as unlikely candidates for inclusion in the general education classroom, leading to more restrictive educational environments (Sterling-Turner, Robinson, and Wilczynski, 2001).

In an effort to maintain a safe and effective learning environment, educators must address the inappropriate behavior of students. Often this behavior is addressed in a reactive manner, utilizing strategies that are punitive in nature (Crone & Horner, 1999; Gresham, 2004; Lane, Umbreit, & Beebe-Frankenberger, 1999; Yell & Katsiyannis, 2000). Exclusion from the educational environment, whether through suspension or expulsion, is one such attempt to limit the occurrence of inappropriate behavior (Rose, 1988). Students with disabilities are traditionally the most vulnerable to exclusion from

the educational environment, as these students are more likely to commit offenses resulting in suspension or expulsion due to underdeveloped social skills, poor judgment, ineffective planning ability, and less adeptness at avoiding detection (Leone, Mayer, Malmgrem, & Meisel, 2000).

While schools have traditionally relied on reactive strategies to deal with disruptive behavior, a more innovative approach includes developing proactive procedures to address problem behavior in its early stages, before individual students suffer long-term consequences (Crone & Horner, 1999). Functional Behavioral Assessment (FBA) is one such proactive strategy that has received widespread attention in the last few years.

This chapter examines current literature pertinent to the impact that legally mandated FBAs have on the work of school psychologists. Specifically, this chapter provides an overview of the history and development of FBA, the rationale for its use, a description and interpretation of the legal mandates as required by the Individuals with Disabilities Education Act (IDEA; 2004), a description of acceptable standards of FBA as defined by the literature, and a review of the research that seeks to investigate current practices in FBA.

The History and Development of FBA

The underlying concepts of FBA originated over 50 years ago from the work of B.F. Skinner (1953), who introduced the terms “functional relationship” and “functional analysis” in a publication exploring the fundamental principles of behavior such as reinforcement, punishment, extinction, and stimulus control. Applied behavioral analysis is an extension of Skinner’s principles of operant conditioning which generally state that

behavior is reinforced by naturally occurring forces operating in the environment (Baer, Wolf, & Risley, 1968). As a behavior alters the environment, this behavior can either be positively or negatively reinforced (producing an increase in the frequency of that behavior), or punished (producing at least a temporary decrease in the behavior). Skinner (1969) argues that the concepts described by operant conditioning impact all of our significant responses in everyday life.

Although the field of functional assessment has evolved since Skinner's early work, the fundamental principles continue to focus on the analysis of behavior, particularly as it relates to the environmental context surrounding the behavior and the subsequent development of procedures to alter undesirable behavior. Prior to the existence of established methods of conducting functional assessments, Carr (1977) initiated the examination of underlying motivation for severe problem behavior instead of merely focusing on treatment of behavior. During his work with individuals who exhibited self-injurious behavior, Carr noted that treatment was likely to be more effective if clinicians developed interventions that accounted for the underlying motivation of the problem behavior. Carr's proposal of the functional relationship between self-injury and its consequences provided a basis for Carr's later work (Carr & Newsome, 1985; Carr, Newsome & Binkoff, 1980). Carr has been credited with the portrayal of the first functional behavioral assessment protocol (Ervin, Ehrhardt, & Poling, 2001). Carr's work was expanded by Iwata, Dorsey, Slifer, Bauman, and Richman (1982). Iwata and colleagues (1982) experimentally manipulated conditions for determining the functions of self-injurious behavior, revealing that the function of self-

injury varied across individuals and therefore had to be assessed individually. Their work has been used as a prototype for subsequent functional analysis research (Repp, 1994).

Early research introducing the concept of functional assessment explored its use in the treatment of individuals with severe developmental disabilities such as mental retardation and autism (Carr & Durand, 1985; Carr et al., 1980; Iwata et al., 1982). Currently, research in FBA has broadened to include individuals with less severe disabilities (Dunlap, Kern, dePerczel, Clarke, Wilson, & Childs, 1993; Lane et al., 1999), and most recently, individuals within the school setting (Lewis & Sugai, 1996; Quinn, Gable, Fox, Rutherford, Van Acker, & Conroy, 2001). The expansion of FBA research to include children in the school setting became particularly relevant upon the passage of IDEA (1997), which requires school-based teams to conduct FBAs and implement positive behavioral intervention plans for those students whose behavior disrupts learning, and more specifically, for those students who are at-risk for a change in placement due to their engagement in behavior that violates school code.

Terminology Associated with FBA

Behavioral assessment, FBA, and functional analysis are terms consistently seen throughout the literature, although few authors take the time to discriminate between the terms (Crone & Horner, 1999; Sugai & Horner, 2002; Sterling-Turner et al., 2001). Behavioral assessment consists of collecting data on a student's behavior through the use of structured interviews, direct observation, and behavioral rating scales (Shriver, Anderson, & Proctor, 2001). The primary purpose of behavioral assessment is to collect behavioral data (e.g., frequency, intensity, duration), not to determine cause-effect relationships (Shriver et al., 2001). Thus, the focus is on the topography of the behavior,

rather than the motivation behind it or the intervention to modify the behavior (Carr, 1993).

FBA, in contrast, is an assessment procedure that strives to discover the reason for, or function of, the problem behavior in an attempt to link specific environment variables to effective intervention strategies (Gresham, 2004; Sterling-Turner et al., 2001; Witt, Daly, & Noell, 2000). Horner & Carr (1997) described FBA as "a process to gather information about factors that reliably predict and maintain problem behavior in order to develop more effective intervention plans". These definitions were further refined by Witt et al. (2000) to include a "collection of methods for gathering information about antecedents, behaviors, and consequences in order to determine the reasons of behavior. This information is used to design interventions to reduce problem behaviors and to facilitate positive behaviors" (p. 3).

The focus of FBA is to discover, through a thorough, multi-modal assessment, the antecedents of behavior and the reinforcement of that behavior (Gresham, Quinn, & Restori, 1999). It is a process that requires systematic measurement of various social and environmental variables associated with the occurrence and nonoccurrence of a particular behavior (Gable & Hendrickson, 1999). Most importantly, the goal of FBA is to develop proactive and positively supportive strategies to cope with problem behavior and teach appropriate behaviors to be used in school and in post-school life (Gresham, 2004).

FBA procedures can be direct (e.g., direct observation in naturalistic settings), or indirect (e.g., record reviews or interviews). It must be emphasized that an FBA is most effective when conducted using a collaborative approach, preferably with a team of individuals who have considerable knowledge of the student and his/her behavior (Crone

& Horner, 1999). If conducted effectively, the proposed function of the problem behavior can be coherently described in a functional hypothesis statement; a succinct summary of the analyzed data that addresses the relationships between the setting events, antecedents, and consequences of the problem behavior (Jolivette, Barton-Arwood, & Scott, 2000).

Functional analysis, a subcategory of the larger FBA process, entails the direct and systematic manipulation of variables in an attempt to verify the functional hypothesis statement (Gresham, 2004; Gresham et al., 1999; Martin & Pear, 1999). Carr (1993) suggested that those interested in functional analysis find the characteristics of the behavior to be less relevant than the motivation behind the behavior.

Functional analysis can be described as one step of the FBA process. Following the formulation of the functional hypothesis statement and preceding the development of the behavioral intervention plan, functional analysis permits school professionals to "test" their hypotheses about the perceived function of behavior (Asmus, Vollmer, & Borrero, 2002; Davis, 1998). According to Vollmer, Iwata, & Zarcone (1993), manipulating the variables that reinforce the problem behaviors enhance the effectiveness of interventions by ensuring that the adaptive behavior is meeting the functional need of the child, rather than the maladaptive behavior.

Rationale for Conducting an FBA

The intent of FBA is to supplant punitive disciplinary actions that are reactive in nature with a preventative and proactive approach to solving behavioral problems that addresses both the needs of specific children and the demands of all school-age children (Gable & Hendrickson, 1999; Drasgow & Yell, 2001). The premise of FBA is that

practically all student behavior is purposeful; it satisfies a need of the student. This need is related to the context in which it occurs. Understanding the motivation of the student can lead to devising alternate ways to meet this need, thereby reducing or eliminating the problem behavior and teaching a more socially appropriate behavior (Gable, Butler, Walker-Bolton, Tonelson, Quinn, & Fox, 2003). Also of importance is that the FBA process prevents the implementation of ineffective interventions based on unconfirmed hypotheses or those which are selected merely because they are popular, customary, or personally favored (Myers & Holland, 2000).

Although current research is seeking to investigate the potential use of FBA for students who exhibit mild to moderate behavioral problems that are chronic in nature (e.g., off-task behavior), FBA is traditionally intended for students who display severe behavioral problems. Gable and Hendrickson (1999) state that the formal practice of FBA is most appropriate for one to three percent of students; that is, those students who display chronic and intense misconduct. Chronic and intense misconduct may include behavior such as severe aggression, carrying/using weapons on school property, or carrying/using illegal drugs on school property. Research indicates that these behaviors are more likely to be present in adolescent students from low-income families, as older students living in impoverished areas have greater access to drugs and weapons than younger students and those living in higher income areas, which in turn, greatly impacts the prevalence of violence (Barbarin et al., 2006; Durant, Krowchuk, Kreiter, Sinal, & Woods, 1999; Forrest, Zychowski, Stuhldreher, and Ryan, 2000). This may have a direct impact on the use of FBA in schools, as it highlights the population for which FBA may be most relevant.

FBA should be examined in the context of a larger organizational framework of positive behavior supports. Sugai and Horner (2002) propose a continuum of behavioral support that is designed to be proactive and systematic. Primary prevention, which is school-wide and classroom specific, is appropriate for 80-90% of students, as these students do not display serious problem behaviors. Secondary prevention, which is deemed adequate for specific settings, consists of interventions for the five to 15 percent of students who are at-risk for serious behavioral problems. Tertiary prevention, or specialized individual interventions such as FBA, addresses the chronic and intense behaviors of 1 to 7 percent of students (Crone & Horner, 1999). The resistance to intervention is one measure of the magnitude and persistence of problem behavior (Gable, Quinn, Rutherford, & Howell, 1998).

Witt, VanDerHeyden, and Gilbertson (2004) state that the intensity of the intervention should be determined only after class-wide instruction and proactive behavioral management systems have been examined. Prior to the implementation of advanced interventions, preventative strategies should be examined and a system should be established that effectively addresses common problems. An FBA is deemed necessary only after a teacher's responses to problem behavior are considered to be consistent and accurate.

Contributions of the IDEA (1997) and the IDEA (2004)

The Individuals with Disabilities Education Act, initially legislated in 1990 and revised in 1997 and 2004, was created to ensure that all students with disabilities receive a free appropriate public education (FAPE) in the least restrictive environment. The concepts of FAPE and "least restrictive environment" originated in Public Law 94-142

(1975) the precursor of the IDEA laws. These concepts formally legislated that general educators were responsible for teaching students with disabilities in the general education setting. In order for an educational environment to qualify as "free" and "appropriate", students with disabilities must receive special education and related services that: are provided at public expense; meet the standards of the state educational agency; include an appropriate preschool, elementary, or secondary school education in the state involved; and receive the services illustrated in the students' Individualized Education Program (IEP) (Katsiyannis & Maag, 1998; Yell & Katsiyannis, 2001). In order to assure that FAPE is protected, the IDEA (2004) states that "The IEP Team must (i) in the case of a child whose behavior impedes the child's learning or that of others, consider the use of positive behavioral interventions and supports, and other strategies, to address that behavior" (§ 300.24 [a] [2] [i]). FBAs are legally required whenever a student in special education whose behavior is determined to be a manifestation of their disability engages in behavior that violates school code and a) is suspended or placed in an alternative setting for more than 10 consecutive days or amounts to a change in placement, or b) is placed in an interim alternative educational setting for not more than 45 days when his/her misconduct involves weapons, controlled substances, illegal drugs, or serious bodily injury upon another person. As § 300.53 (d) (ii) (3) states, an FBA is not required if a child with a disability has been removed from his/her current placement for 10 school days or less in that school year "if services are not provided to a child without disabilities who has been similarly removed." An IEP team meeting addressing the need for an FBA and corresponding behavioral intervention plan (BIP) is required within 10 business days from when a student is first removed for more than 10 school days.

The fact that the IDEA (2004) mandates that educators have the legal responsibility to proactively address the problem behavior displayed by students with disabilities signals a fundamental shift in how problem behavior is viewed. No longer is problem behavior viewed as within-child, but as a response to environmental conditions. Furthermore, educators are beginning to acknowledge the relationship between academic problems and inappropriate behavior; both can be interpreted as problems that impede learning. Educators must share the responsibility of addressing the problem behavior rather than simply denying their potential role (Gable, Hendrickson, & Van Acker, 2001).

It is important to note that although the IDEA (2004) requires the school to conduct a full and individualized assessment that results in enough information to lead to appropriate programming, it does not define an FBA or detail its necessary components. In fact, the U.S. Department of Education specifically refused to define an FBA, noting that "IEP teams need to be able to address the various situational, environmental, and behavioral circumstances raised in individual cases" (OSEP Questions and Answers, 1999, p. 12623). Furthermore, the IDEA (2004) does not define or describe problem behavior, determine the methods with which data should be collected, make inferences as to the individuals responsible for conducting the FBA, or determine the extent of their training in FBA (Drasgow & Yell, 2001).

Legal Issues and FBA

Drasgow and Yell (2001) conducted a review of due process hearings that directly involved FBAs from the time that the IDEA (1997) became law until August 2000. They found 14 state level due process hearings in which a primary dispute involved the conducting of an FBA by a school district. In 13 of the hearings, the hearing officer ruled

in favor of the parents and against the school districts (94%). In 11 of the cases, the school districts failed to conduct an FBA when it was required. In three hearings, hearing officers ruled against school districts because the IEP team conducted an inadequate FBA. In one case, the school psychologist had conducted a single hour-long classroom observation during a class party, a grossly inadequate assessment of the student's behavior. During the due process hearings, school-based FBAs were compared to those conducted by independent evaluators. The independent evaluators were determined to be more closely aligned with the best interests of the students, as the hearing officer stated that the school districts had violated the IDEA (1997) and had not protected the students' right to a FAPE.

Thus, Drasgow and Yell (2001) indicated that "the primary difficulty school districts face is complying with the procedural requirements for conducting an FBA. School districts are still challenged by the requirements 3+ years after the passage of IDEA '97. It appears that although IDEA '97 requires that the IEP team must conduct an FBA, in most of these cases the IEP team simply did not do it" (p. 246). Van Acker et al. (2005) echoes this sentiment, stating that current litigation indicates that schools often fail to conduct the required FBAs or, when they do so, produce an FBA of inferior quality. Consequently, BIPs are also omitted. Yell, Katsiyannis, Bradley, & Rozalski (2000) suggested that school districts are most likely to be vulnerable to lawsuits in regards to FBAs by failing to address problem behavior and discipline in the student's IEP and not following the behavioral plans and procedures as indicated in the student's IEP. Gable and Hendrickson (1999) postulate that most unacceptable FBAs result from a

limited knowledge of the law, lack of proper training, and/or insufficient resources or technical assistance.

Accepted Standards of FBA as Defined by the Literature

A review of the literature indicates that it is difficult to write a conclusive "best practices" manual detailing how FBA should be most properly conducted in the school setting. Despite its widespread use and the legal mandates of IDEA (2004), agreement on what constitutes an FBA has not been achieved (Sugai, Lewis-Palmer, & Hagan-Burke, 1999-2000). It has not been agreed upon as to which procedures are necessary or universally utilized when conducting FBAs (Scott, Meers, & Nelson, 2000). It is generally conceded in the literature that FBAs should be conducted for any student showing the potential for chronic behavior, regardless of their placement in the special education program, their likelihood of undergoing a change in educational setting, or their likelihood of bringing a weapon or drugs to school (Knoster & McCurdy, 2002; Martin & Pear, 1999). As stated by Knoster & McCurdy (2002), "Assessment and intervention for students who display behavior problems should begin at the onset of problems" (p. 1011). They further assert that FBA can be used prior to the initial evaluation of students by the IEP Team, as FBA can be used as a pre-referral intervention. Once it is determined that an FBA is necessary, it should not be used merely to determine eligibility, but to aid in developing specific programming (Drasgow & Yell, 2001).

Accepted standards of FBA as defined by the literature are driven by researcher interpretation of the spirit behind the IDEA (2004). It is generally understood that the IDEA (2004) was originated in an attempt to preserve FAPE for students with

disabilities. In light of this, Myers and Holland (2000) state that in order to conduct a legally sound FBA, it should be conducted in a consultative process by a qualified school-based team (e.g., the IEP team). The collaborative process will allow multiple team members to provide different but relevant perspectives and levels of expertise. Furthermore, Quinn (2000) asserted that this team should have received training in data collection procedures, interpreting data, and developing, implementing and evaluating interventions based on FBA data. The team should take care to collaborate with and collect data from the student's parents, as they are a valuable source of information. Finally, programming decisions based on FBA must be included in the student's IEP in the following sections: a) present levels of educational performance, b) measurable goals and objectives, and c) services to be received (Drasgow & Yell, 2001).

Proposed FBA techniques often illustrate components that are similar or compatible. FBA is typically described as a multi-step process, the most of common of which involves three primary phases: 1) the descriptive phase, 2) the interpretive phase, and 3) the verification phase (Asmus et al., 2002; Ervin, Radford, Bertsch, Piper, Ehrhardt, & Poling, 2001; Sterling-Turner et al., 2001). These phases are briefly illustrated in Table 1.

Table 1

Phases of FBA

Phases of FBA
Phase 1: The Descriptive Phase
Step 1: Use indirect data collection measures to identify one or two problem Behaviors that are most impacting the student's academic and social success
Step 2: Operationally define problem behaviors (referred to as "target behaviors").
Step 3: Use direct assessment methods to collect specific data on target behaviors.
Phase 2: The Interpretive Phase
Step 1: Analyze the data collected on the target behavior.
Step 2: Develop hypotheses regarding the function(s) of the target behavior.
Phase 3: The Verification Phase
Step 1: Verify the hypotheses by systematically manipulating environmental variables. This process is also referred to as functional analysis.

The Descriptive Phase

The purpose of the descriptive phase is to collect relevant data on the problem behavior(s) through a variety of indirect and direct assessment measures. One of the most significant barriers to the implementation of the IDEA (2004) mandate for FBA is that many school personnel do not have a clear understanding of the purpose or method of collecting meaningful data (Conroy, Katsiyannis, Clark, Gable, & Fox, 2002; Van Acker et al., 2005). For data collection to be meaningful, it must be collected reliably and validly in an ongoing process, and must sample relevant, representative behavior. There must be a clear definition of what is to be assessed (e.g., behavior, cognition,

affect) and the methods used (e.g., interview, self-report, direct observation) (Deno, 1992; Fuchs & Fuchs, 1990; Mash & Terdal, 1997; Yell & Drasgow, 2000).

The first step in conducting an FBA is to identify one or two problem behaviors that are most impacting the child's academic and/or social success (Jolivette et al., 2000). While children often have an extensive repertoire of problem behaviors, it would be unrealistic to address all of these behaviors at one time, particularly since each problem behavior may have multiple maintaining functions. Therefore, it is up to the evaluation team or the IEP team to determine which behaviors are the most detrimental to the student's success. In order to properly identify these behaviors, the team may collect data on the child using indirect measures such as record reviews, rating scales, and interviews with individuals who are very familiar with the child and his/her problem behavior.

The second step of the descriptive phase consists of operationally defining the problem behaviors identified. Specifically, the "target behaviors", as they will henceforth be referred, should be specific, observable, and measurable. "Disruptive behavior", or "passive-aggressive behavior" is not defined well enough to reliably measure. However, "leaving the school building without permission", "using foul language", and "hitting peers" are specific, observable, and measurable behaviors that can be referred to as target behaviors.

The third step in the descriptive phase is utilizing direct measures of assessment to collect descriptive data on the target behaviors. This often takes the form of multiple systemic observations of the student in a variety of settings. Narrative recording, event recording, or observations based on time-sampling procedures are among the most commonly discussed direct measures of assessment in the literature (Sterling-Turner et

al., 2001). Their success is greatly dependent on the observer not only examining the behavior of the child displaying the target behavior, but addressing the relevant setting events, antecedents, and consequences.

The Interpretive Phase

The purpose of the interpretive phase of the FBA process is to generate hypotheses regarding the functions of the target behaviors. The first step of this phase consists of analyzing collected data in order to thoroughly examine the frequency, duration, and intensity of the target behaviors. Frequency of the target behavior refers to how often the behavior is occurring (e.g., every day, once a week, or once a month). Often, behaviors that occur infrequently become worrisome due to their duration or their intensity. For example, while Billy may crawl under his desk only once a week (frequency), each time he may remain under there for several hours (duration), effectively disrupting the entire school day. Once under the desk, however, the intensity may be low, as he may sit quietly for several hours, completing his work under the table, and gradually crawling out and rejoining the class. Throughout this display of inappropriate behavior, his peers may become oblivious, resulting in minimal disruption. While it still may be a problem behavior, its intensity may not be severe.

In addition to examining the data to determine the frequency, duration, and intensity of the target behaviors, the setting events, antecedents, and consequences must be examined in order to develop hypotheses about the function(s) of the target behaviors. Watson and Steege (2003) state that setting events can be categorized in one of two categories: temporally proximate setting events and temporally distant setting events. Temporally proximate setting events are those that occur close in time, and usually in the

same environment as the problem behavior. An example of a temporally proximate setting event is when incidents of aggressive behavior increase with an increase in classroom size (McAfee, 1987). In contrast, temporally distant setting events refer to those events that occur apart from the immediate environment in which the problem behavior occurs. An example of this may be when a student who returns home after spending the weekend with his father exhibits aggressive behavior at school the following week.

Antecedents of the target behavior refer to the activities that typically precede and trigger the target behavior (Gresham, Watson, & Skinner, 2001; Yell & Katsiyannis, 2000). Types of antecedents may include instructional antecedents (e.g., being asked to complete a writing activity independently), interpersonal (e.g., teasing from peers), or environmental (e.g., presented with an unstructured situation). Often, once data is examined, there is a clear pattern of antecedents that typically occur prior to the onset of the target behavior.

Consequences of the target behavior consist of events or actions that occur as a result of the target behavior. Problem behavior is maintained when consequences are either positively or negatively reinforcing. Witt et al. (2000) state that consequences fall into two basic categories: things that students get from a behavior (e.g., peer attention, teacher attention, good grades, tangible rewards) and things from which students escape as a result of the behavior (e.g., escape from difficult tasks or requests).

The second step of the interpretive phase is to develop hypotheses regarding the functions of the target behavior. Developed hypotheses should be coherently described in a hypothesis statement; a succinct summary of the analyzed data that provides a

proposal of the function of the target behavior (Jolivette et al., 2000). The hypotheses statement should refer to the relationships between the setting events, antecedents, and consequences with the target behavior. The literature offers six of the most common functions of target behavior. These include: 1) social attention or communication, 2) tangible rewards or incentives, 3) escape, avoidance, or delay of tasks, 4) escape, avoidance, or delay of interaction with specific individuals, 5) sensory reinforcement, or 6) power, control, or intimidation (Jolivette et al., 2000; O'Neill, Horner, Albin, Sprague, Storey, & Newton, 1997). For each of these functions, different interventions may be offered in hopes of decreasing their occurrence in the classroom, or, more appropriately, permitting the student to meet this need in a more socially acceptable manner. For example, Billy may crawl under desks whenever the teacher directs him to read aloud. Therefore, the function of his behavior may be to escape embarrassment, as he is convinced that he cannot read well enough to avoid teasing from his more able peers. The next step is to design positive interventions that lead to the modification of the antecedents or consequences of his behavior. For example, the teacher may propose that Billy does not have to read aloud unless he raises his hand to volunteer. Also, the teacher may design an academically based intervention in hopes of improving his reading skills.

The Verification Phase

The purpose of the verification phase of the FBA process is to systematically manipulate environmental variables in order to test the validity of the hypotheses generated in the interpretive phase. This is potentially the most challenging and time-consuming aspect of an FBA (Sterling-Turner et al., 2001). However, functional analysis

permits the investigator to make causal statements, rather than merely descriptive or correlational statements (Horner, 1994).

Based on the information portrayed in the hypothesis summary statement, an intervention is selected that directly responds to the maintaining function of the problem behavior. This intervention is designed to satisfy the functional need of the student while reducing problem behavior and increasing socially acceptable behavior. This intervention is tested in the context of a single-subject design to determine the effect on behavior over a period of time. The intervention is not deemed effective until a significant reduction in problem behavior from baseline levels is recorded using formal data collection procedures. There are three basic methods of recording behavior: event, interval and time-sampling recording. Event recording requires noting every instance of a behavior during a specified time segment. Interval recording involves a specific block of time divided into equal intervals of short duration (often 10 seconds), then the behavior is recorded once per interval, if it occurs, no matter how many times it occurs. Time-sampling techniques involve recording a behavior as occurring or not occurring during very brief observation intervals, each of which is separated from the others by a predetermined and set period of time (Asmus et al, 2002; O'Neill et al., 1997).

Specific strategies on conducting functional analysis consist of presenting different environmental variables and collecting systematic data on how these variables impact the student's behavior (O'Neill et al., 1997; Watson, Ray, Sterling-Turner, & Logan, 1999). For example, for one student it may be hypothesized that she is most likely to tantrum when confronted with a writing task, suggesting that her behavior is maintained by a desire to escape the task. This hypothesis may be verified by presenting

all writing tasks on a predetermined schedule. Through careful data collection, it can be determined whether this student does indeed tend to tantrum when asked to write. If so, interventions can be designed to improve her functioning by eliminating the reinforcement of the problem behavior, teaching and reinforcing socially acceptable alternative behaviors, and/or providing her with the necessary academic instruction to reduce her writing deficits.

Designing a Behavioral Intervention Plan (BIP)

Once the three steps to conducting an FBA are completed, it is necessary to design a BIP. It should be emphasized that while conducting an FBA is a process, a BIP is the product. A completed FBA is of limited value without a carefully designed BIP to aid teachers in fostering positive behavior within the classroom environment. The purpose of the BIP is to create proactive and preventative interventions in order to reduce the occurrence of the target behavior and replace the problem behavior with more appropriate academic and social behaviors (Crone & Horner, 1999; Quinn et al., 2001). For example, writing a BIP that includes, "place student in time-out when he engages in the problem behavior" is reactive, and contradicts the intent of a BIP.

The first goal of a BIP is to design methods to manipulate the setting events, antecedents, and consequences in order to minimize the occurrence of the problem behavior. Examining the results of the FBA, particularly the data collected in the verification phase (i.e., functional analysis) is critical to understanding the response-reinforcer relationship of the problem behavior. Once the relationship has been established, appropriate modifications to the environment must be designed and implemented.

Setting events are functionally related to the problem behavior in that the behavior is more likely to occur than if the setting event is absent (e.g., a student is more likely to engage in self-injurious behavior when in a noisy, chaotic setting than when in a quiet classroom) (Asmus et al., 2002). Setting events may include such aspects as location, physical characteristics of the environment, and time of day. The functional relationship between the setting events and the problem behavior is likely to be correlational, rather than causal (Gresham, Watson, & Skinner, 2001). Direct observation is likely to be the most effective method of gathering data on setting events, providing that the observer is attentive to examining the physical environment in which the student is displaying the problem behavior (Gresham, Watson, & Skinner, 2001; Witt et al., 2000).

Antecedent-based interventions, or interventions that address the variables that directly precede the behavior, are preventative in nature (Conroy and Stichter, 2003; Luiselli & Cameron, 1998). For example, if a student engages in problem behavior in order to escape an academic task or to avoid interpersonal contact, the behavior may be reduced if the teacher reduces the task difficulty or permits the student to work independently. If the student is misbehaving in order to obtain attention, the teacher may need to develop schedules of enriched attention. At times it is appropriate to eliminate an antecedent (e.g., a student engages in vandalism when left unattended after school). If it is inappropriate to eliminate an antecedent (e.g., such as when a student engages in disruptive behavior when asked to complete writing tasks), the antecedent can be modified to improve the student's functioning (e.g., permit the student to use a word processor or a spell-checking device)(Witt et al., 2000).

A problem behavior can be reinforced by its consequences, which may be positive or negative in nature. Positive reinforcement increases the likelihood of a behavior, and may be present in several forms: a) social attention, such as praise, eye contact, or redirection; b) tangible reinforcers, such as stickers or a favorite snack; or c) preferred activities, such as playing a game, going to the park, or using the computer (McComas & Mace, 2000). Negative reinforcement results in the removal, delay, or modification of task demands that are aversive in nature (e.g., the teacher removes a demand when the student engages in verbally abusive behavior) (Gresham et al., 2001).

Intervention to address a reinforcing consequence may take the form of extinction, differential reinforcement, or noncontingent reinforcement (Asmus et al., 2002). Extinction requires the elimination of a reinforcer. For example, if a child acts out in math class to escape a difficult academic task, extinction involves failing to allow the student to leave class despite the occurrence of the problem behavior. For extinction to be successful, inadvertent reinforcement must not occur (Lerman & Iwata, 1996). Differential reinforcement, in contrast, is typically understood as the reinforcement of an alternative behavior. Although this allows the student to learn a socially acceptable behavior and is less sensitive to deficits in treatment integrity, it requires continuous supervision (Vollmer & Iwata, 1992). Finally, noncontingent reinforcement involves presenting a reinforcer on a response-independent or time-based schedule. While noncontingent reinforcement does not explicitly teach individuals a socially acceptable response, it does not require continuous supervision (Asmus et al., 2002).

The second goal of a BIP is to offer methods to either teach the skills necessary to engage in an acceptable replacement behavior, or offer strategies to increase the child's

motivation to engage in acceptable replacement behavior. Often children do not know how to physically engage in an appropriate replacement behavior (Asmus et al., 2002). If the student does not know how to behave appropriately, the BIP can be formulated remediate this skill deficit, with a clear delineation of the strategies and supports necessary to do so, as well as the establishment of clear expectations. As Witt et al., (2004) states, "replacement behaviors may be either academic or social in nature and are taught to the student by designing instructional sequences involving modeling, prompting, rehearsal, shaping, discrimination training, and providing consistent feedback" (p. 375). A task analysis may be reveal the necessity of teaching both cognitive and behavioral skills in order to provide the student with the tools necessary to exhibit the replacement behavior (Gable et al., 1998; Scott, McIntyre, Liaupsin, Nelson, Conroy, & Payne, 2005). These replacement behaviors are intended to serve the same function as the inappropriate behavior.

Rather than displaying a skill deficit, a student may simply lack the motivation to engage in socially acceptable behaviors. Motivation may be enhanced by using such strategies as praise, group contingencies, over-correction, response cost, and token economies (Witt et al., 2004). These strategies are intended to provide students with a reason to behave as expected.

The final step in the FBA/BIP process is to implement the strategies created on the BIP, monitor the student's progress, and modify the BIP, if necessary. During the weeks following the implementation of the strategies on the BIP, data collection must continue in order to accurately document progress. Often accurate data collection will indicate that a target behavior has reduced significantly, but to a frustrated teacher, the

BIP may not appear to be helping at all. Permitting the teacher to view results of the data collection may motivate him/her to continue the BIP.

A primary purpose of evaluating the student's progress (or lack thereof) is to monitor whether the BIP has been accurately and consistently executed by each of the necessary implementers (Flugum, 1994; Walker, Ramsay, & Gresham, 2004). For example, a student's BIP may indicate that he should not be seated near the rear of the classroom, as he is more likely to crawl under the table at the back of the room if frustrated. However, during a review of this student's progress the team discovers that in his music class his behavior has not improved, nor has the teacher consistently seated him in the front of the room. Therefore the music teacher may need to be reminded or re-trained in how to implement the BIP.

Related Research

Existing research on FBA has tended to focus on general concepts relating primarily to a) specific methods of systematically conducting an FBA in a school-based setting (Deno, 1992; Fuchs & Fuchs, 1990; Jolivette et al., 2000; Mash & Terdal, 1997; Sterling-Turner et al., 2001; Yell & Drasgow, 2000), b) examining the utility of FBA procedures in evaluating and treating behavioral problems, particularly those behaviors that are low-incidence and severe in nature (Ingram, Lewis-Palmer, & Sugai, 2005; Repp & Karsh, 1994; Rogers, 2001; Umbreit, 1995), c) interpreting the legal mandates posed by the IDEA and discussing its impact on how students with disabilities can be disciplined for major school code violations (Drasgow & Yell, 2001; Van Acker et al., 2005; Yell et al., 2000), and d) discussing the barriers to conducting FBAs in the school environment, particularly with regards to the lack of staff training in FBA procedures

(Crone & Horner, 1999; Gable et al., 2001; Jolivette et al., 2000; March & Horner, 2002; Reid & Nelson, 2002). Findings from these studies suggest that FBA is an effective method of addressing severe behavior problems, although research with students with high-incidence disabilities that display chronic behavioral problems that are less severe in nature is inadequate (Gresham, 2004). Nelson, Roberts, Rutherford, Mathur, and Aaroe (1999) report that legislative policy has preceded empirical research supporting the use of FBA in general education settings. Although Lewis and Sugai (1996) and Umbreit (1995) demonstrated the efficacy of FBA with students without developmental disabilities or students in the general education setting, their research methods was limited to single-subject design. Furthermore, researchers continue to acknowledge that FBA is a time-intensive process that requires highly motivated and well-trained staff to implement effectively (Gable & Hendrickson, 1999; Reid & Nelson, 2002).

Few studies have attempted to ascertain school professionals' perceptions of their familiarity with the IDEA (2004), or whether these professionals consistently demonstrate the ability to conduct FBAs in compliance with legal mandates. Research has not adequately explored the nature of school professionals' training in the FBA process, the typical content included in FBAs, or the reasons for which FBAs are typically conducted in the school setting.

Survey research regarding FBA has yet to capitalize on the experience of school psychologists. Several studies have examined teacher practices and perceptions in FBA and found their knowledge base lacking (Larocque, 2002; Myers & Holland, 2000; Nelson et al., 1999). School psychologists have the opportunity to collaborate with teachers in order to aid in the production of quality FBAs. But it must not be assumed

that school psychologists are familiar with how to conduct an empirically valid FBA, nor should it be assumed that school psychologists are functioning as an active member of the FBA team.

A review of literature indicates that there has only been one study surveying school psychologists regarding the FBA process. This study, conducted by Nelson and colleagues (1999), surveyed 111 school psychologists and 105 special education administrators regarding their views of current practices in FBA. Results indicated that special education administrators and school psychologists believe that "FBA is more effective, useful, suitable, and practical for those students who exhibit low-level chronic problem behaviors (e.g., noncompliance) than with those who exhibit unique low frequency behaviors (e.g., violation of drug policies)" (p. 274). In addition, they were more likely to believe that conducting FBAs with students who exhibit low-level chronic problem behavior was more compliant with best practices in FBA. Finally, the survey revealed that administrators and school psychologists perceive their training in FBA to be inadequate.

The remainder of research that attempts to assess current practices and opinions regarding the FBA process involves teachers. Research has not determined whether school-based personnel will be able to complete a valid FBA in the absence of assistance from an expert, despite direct training in the FBA process (Scott et al., 2005). Following a state-wide training effort in Wisconsin, 71 FBAs were submitted for critical review (Van Acker et al., 2005). This study suggested that special educators, parents, school psychologists, and general educators were the most frequently involved in the FBA process. When the content of the FBA was examined, it was discovered that 52% failed

to define the target behavior adequately. Twenty-five percent of the FBAs submitted failed to identify the function of the target behavior, and only 15% of the FBAs submitted documented an attempt to verify the hypothesized function of the target behavior. Regarding data collection, 90% used indirect methods of data collection, while only 49% of FBAs indicated that the student had been directly observed. When the corresponding BIP was examined, it was discovered that 79% of BIPs employed the delivery of aversive consequences for the display of the target behavior. Only 54% of BIPs proposed positive behavior supports. Finally, it should be noted that only 35% of the interventions developed directly related to the function of the behavior as determined by data collected in the FBA process. This study, published nearly eight years after the concept of FBA was first introduced in IDEA (1997), portrays a disheartening picture of educators' progress in FBA and positive behavioral supports for students with significant behavioral problems.

Scott et al. (2005) sought to investigate whether there were differences between experts and school-based teams in the selection of intervention strategies. Certified staff members were provided with six hours of training to act as facilitators of school-based intervention teams. Two intervention plans were developed for each of the 31 students chosen; one developed by the school-based team, the other developed by the authors. Both intervention plans were developed based on the school-based team's hypothesis of the behavioral function. Results indicated that school-based teams tended toward more reactive and negative interventions than did experts, regardless of the identified function of the behavior. This study suggests that despite training, school professionals struggle to create valid function-based interventions.

Bergstrom (2003) completed a dissertation investigating whether school-based teams demonstrated the ability to independently develop and implement effective function-based behavioral intervention plans. Results indicated that the educators were able to develop valid hypothesis statements and develop intervention plans that were extremely successful in reducing problem behaviors. This study was a successful attempt to replicate similar findings by Chandler, Dahlquist, Repp, and Feltz (1999).

Larocque (2002) surveyed 122 special education teachers in order to assess their self-reported knowledge, beliefs, and perceptions concerning FBA. In addition, 104 of these teachers submitted an FBA to be critically examined for compliance with those policies described in IDEA (2004). She found that 28% of special educators reported zero hours of in-service training related to FBA. However, most rated their knowledge base as "moderate" or "strong". When the submitted FBAs were examined, it became apparent that although teachers were able to describe the problem behavior and the context in which it occurred, only 43% described the function of the child's behavior and only 12% used direct measures of assessment to test the hypotheses. While teachers acknowledged that FBAs lead to more effective interventions, they felt they were not efficient enough for common use.

Myers and Holland (2000) also conducted a study with 177 general educators and 32 special educators that suggested that teachers struggle to determine the function of students' problem behaviors. The respondents were presented with three scenarios, each of which implied a different behavioral function (escape, peer attention, and teacher attention, respectively). The respondents were asked to identify an appropriate intervention strategy. It was only on the "teacher attention" scenario that nearly 50% of

the teachers were able to specify an intervention that appeared to account for the function of the behavior. The vast majority of teachers postulated an inappropriate invention for the remaining two scenarios, suggesting that educators place little emphasis on the motivation behind a student's behavior. Finally, it should be noted that less than half of the teachers surveyed had received any training in FBA.

Dieterich and Villani (2000) conducted pilot study with 130 teachers and administrators enrolled in an Educational Leadership Program at a state university in New Jersey. Results revealed that only 10% of respondents felt that school psychologists should be responsible for coordinating FBAs. Nearly half of the respondents were not familiar with the IDEA (1997) or the legal obligation to conduct FBAs under certain circumstances. All of the respondents indicated that they had never received training in FBA.

Current research, primarily conducted with teachers, suggests that school professionals struggle to conduct a valid FBA and design an appropriate BIP based on the obtained information. While it appears that school professionals demonstrate potential in defining target behavior and determining its function, there is a tendency for this function to be overlooked when the BIP is designed.

Summary

The purpose of this chapter was to review the salient literature regarding current issues and practices in FBA. The history, development, and rationale of FBA were briefly discussed. IDEA (2004) and its impact on education was described. Acceptable standards of FBA as defined by the literature were highlighted, with a detailed portrayal of the three phases necessary to conduct a valid FBA. Finally, research relating

specifically to current practices was reviewed, with particular emphasis placed on survey research conducted with school professionals.

FBA is a process designed to aid educators in determining the motivation behind students' problem behavior in order to create an individualized behavioral intervention plan that reduces problem behavior and encourages socially acceptable behavior. An FBA is mandated by the IDEA (2004) whenever a student in special education whose behavior is determined to be a manifestation of their disability engages in behavior that violates school code and leads to a change in their educational placement. Although the IDEA (2004) does not offer specific guidelines in FBA, the results of litigation suggest that school districts are consistently performing below legal expectations, possibly due to poor understanding of the law, inadequate training in the FBA process, and limited resources (Gable & Hendrickson, 1999).

A review of literature indicates general agreement in how an FBA is best conducted. Specifically, the FBA process should consist of three primary phases: the descriptive phase, the interpretive phase, and the verification phase (Asmus et al., 2002; Ervin, Radford, Bertsch, Piper, Ehrhardt, & Poling, 2001; Sterling-Turner et al., 2001). These three phases should culminate in the creation of an individually designed BIP that addresses the function of the student's behavior and introduces specific steps to teach and reinforce positive behavior.

Finally, research conducted on the FBA process suggests that there is a dearth of information regarding how school professionals are currently interpreting legal mandates. While several studies have attempted to gather information on whether teachers consistently demonstrate the ability to conduct a valid FBA that leads to a function-based

intervention plan, school psychologists' perceptions and current practices in FBA have not been explored.

CHAPTER III

METHODS

This chapter reviews methodological procedures for the present study. Specifically, this chapter describes the selection of the sample, the design of the study, the instrument used in the study, and the procedures for data collection. Data analysis procedures are presented for each of the research questions.

Design

The present research design consists of an exploratory survey regarding current practices in Functional Behavioral Assessment (FBA). The survey is non-experimental and descriptive in nature, and was designed to access the experience and perceptions of school psychologists with regard to FBA. Figure 1 is a research path diagram displaying the potential relationships between variables, with particular emphasis placed on the specific hypotheses proposed. Within the diagram, the reliability classifications of "excellent", "good", and "moderate" were used to rate the reliability for each of the variables presented. For variables such as sex, highest degree earned, state employed, and years of experience, the reliability classification was deemed "excellent" in light of the fact that the data is objective in nature and can be recorded by the respondents with accuracy. For those variables more subjective in nature, such as socioeconomic status of the students served and perceived emphasis on FBA in graduate programs, the reliability classification was categorized as "good" because it is assumed that respondents' personal experience with these issues was reported with adequate accuracy. Finally, variables for which reliability was statistically analyzed using percentage of agreement, chi-square, or a bivariate correlation, the reliability was classified according to the accepted standards

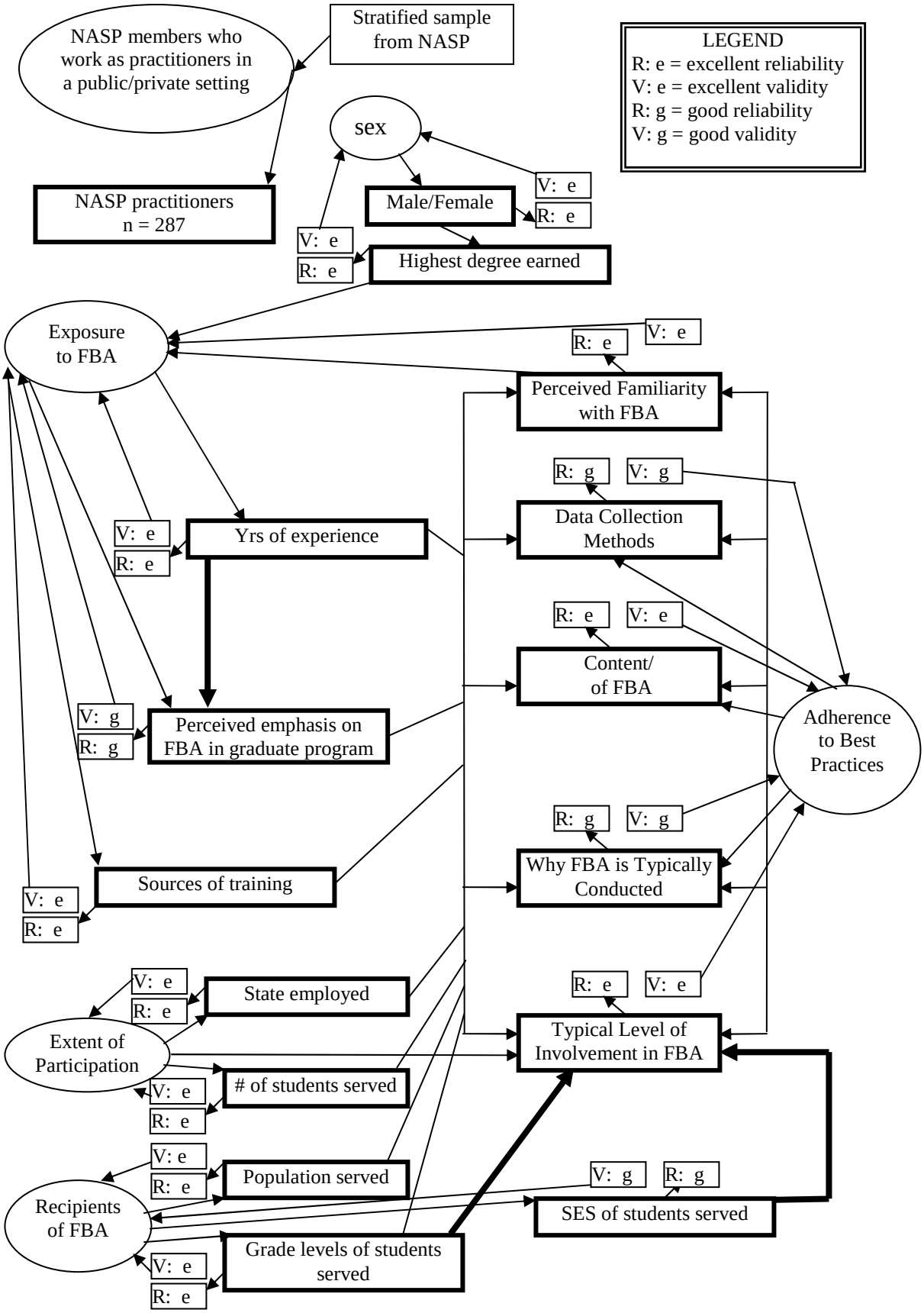

Figure 1. Research path diagram of the Current Practices in FBA project.

set forth in the literature (http://www.childrensmercy.org/stats/definitions/kappa.htm). Specifically, reliability ratings were as follows: poor agreement (less than 0.20), fair agreement (0.20 to 0.40), moderate agreement (0.40 to 0.60), good agreement (0.60 to 0.80), and excellent agreement (0.80 to 1.00).

Population

The population targeted for participation in the present study was members of the National Association of School Psychologists (NASP). Only those school psychologists employed full- or part-time in the public or private school setting were included in data analysis. Those school psychologists who work in alternative environments such as the university setting, administrative setting, hospital setting, or private practice were instructed to cease completing the survey after question one and return the survey in the self-addressed, stamped envelope included in their survey packet.

Sample

Participants in the study were selected by obtaining a sample of 500 school psychologists from the National Association of School Psychologists (NASP). A research application for "Access to the NASP database" was completed and IRB approval was obtained from NASP. A random sample of 500 school psychologists, stratified by region of the country, was provided by NASP for a nominal fee.

Assignment

Each participant was given an identical survey.

Instrumentation

The instrument used in this study was a survey generated by the researcher. The purpose of using a survey was to gather data regarding details surrounding the FBA

process in public and/or private schools. This survey was entitled "Current Practices in Functional Behavioral Assessment" and consisted of 28 multiple-choice questions. In order to answer the questions, school psychologists were instructed to "check all that apply". This survey is divided into five parts, each of which is described below. A copy of the survey is available in Appendix B.

Part I

Part I of the survey consisted of eight questions designed to collect demographic information from the participants. The participants were asked to indicate the following: a) sex, b) highest degree earned, c) state in which they work, d) years of experience, e) grade levels with whom they work, f) populations with whom they work, g) number of students served, and h) estimated socio-economic status of students served.

Part II

Part II of the survey consisted of one question. The participant was given the definitions of two terms which were used throughout the survey. These terms were: Functional Behavioral Assessment (FBA) and Behavioral Invention Plan (BIP). The participants were then asked to indicate their perceived familiarity with the term "Functional Behavioral Assessment".

Part III

Part III of the survey consisted of four questions. The first two questions inquired about the emphasis placed on FBA in school psychology graduate programs. The third question requested that the participants indicate the type of training received in FBA since the completion of their graduate school program. Finally, participants were asked to note the number of hours obtained of this FBA training.

Part IV

Part IV of the survey consisted of one question designed to obtain information about school psychologist's typical level of involvement in the FBA process.

Part V

Part V of the survey consisted of 10 questions designed to obtain information about the individuals responsible for creating an FBA, the reasons for which FBAs are typically conducted, data collection methods, the role of BIPs, and the typical content of an FBA.

Procedure

The survey materials administered to the participants were distributed and returned by mail. The data collection process consisted of the following four steps: initial survey distribution, 14-day follow up letter, 30-day follow-up mailing, and the obtainment of a reliability sample. Those participants who did not wish to participate were instructed to disregard the survey.

Using the addressed labels provided by NASP, codes were assigned to number the respondent and to identify the state from which each respondent originated. For example, the first participant from New York State was assigned the following code: NY-1. The coding did not compromise the respondents' confidentiality. When a member of the sample returned a completed survey, their code was flagged in order to indicate their eligibility for the sample used in the reliability analysis.

Initial Mailing

The initial survey packet consisted of an informed consent form, survey materials, and a self-addressed stamped envelope. The informed consent form was written on letterhead provided by Indiana University of Pennsylvania. The content of the letter described the purpose of the survey in a manner designed to encourage participation. The participants were assured of confidentiality and reminded of the voluntary nature of their participation. A copy of the informed consent form is available in Appendix A.

14-Day Follow-Up Letter

Fourteen days after the initial mailing, reminder letters were mailed to all participants who had not returned a survey. The purpose of mailing this letter was to encourage a response from those participants who had not yet responded and to provide participants with the opportunity to request a survey if they had not yet received one or misplaced their initial copy. A copy of the 14-Day Follow-Up Letter is available in Appendix C.

30-Day Follow-Up Mailing

Thirty days after the initial mailing of the survey materials, a second explanatory letter was mailed with a second copy of the survey to those respondents who did not respond previously. A brief handwritten note was included in order to encourage a response. Once again, the purpose of the study was shared and the participants were reminded that their participation is voluntary. A copy of the 30-day follow-up mailing letter is available in Appendix D.

Reliability Analysis

Approximately 60 days after the initial mailing of the survey materials, a reliability sample letter was mailed to 28 randomly chosen respondents. The letter reminded the respondents of the purpose of the study, reiterated that their participation was voluntary, and clearly stated that a reliability analysis was to be conducted. A copy of the reliability sample letter is available in Appendix E.

Data Analysis

The data were analyzed using the computer program SPSS Graduate Pack, 13.0 for Windows (SPSS, 2000). Due to the fact that this investigation is an exploratory study, only 2 of the 12 research questions are accompanied by a directional hypothesis. The research questions, hypotheses, survey item numbers, and method of data collection for each research question are described in Table 2:

Table 2

Research Questions, Hypotheses, Survey Item Numbers, and Method of Data Analyses

Research Question	Hypothesis	Survey Item	Method of Data Analysis
1. To what degree are school psychologists familiar with the term FBA?	No specific hypothesis	10	frequency distributions and percentages
2. To what extent is FBA emphasized in school psychology graduate programs?	Those respondents who completed their training prior to 1997 (inception of the IDEA 1997) may have been less likely to graduate from a program with a stronger emphasis on FBA.	11, 12	frequency distributions, percentages, and independent samples *t* test
3. What sources of post-graduate training are school psychologists receiving in FBA?	No specific hypothesis	13	frequency distributions and percentages
4. On average, how many hours of post-graduate training in FBA have school psychologists received?	No specific hypothesis	14	frequency distributions and percentages
5. How typically involved in the FBA process do school psychologists perceive themselves to be?	No specific hypothesis	15	frequency distributions and percentages

6. Is school psychologists' involvement in the FBA process impacted by: a. sex b. highest degree earned c. years of experience d. region employed e. grade level of the students served f. number of students served g. socioeconomic status of the student served	a. No specific hypothesis b. No specific hypothesis c. No specific hypothesis d. No specific hypothesis e. School psychologists who work with students in the higher grades are more likely to be involved in the FBA process. f. No specific hypothesis g. The higher the percentage of "poor" students with whom a school psychologist works, the more likely he/she is to be involved in the FBA process.	2-9, 15	a. Kendall's Tau correlation b. Kendall's Tau correlation c. Kendall's Tau correlation d. Kendall's Tau correlation e. Kendall's Tau correlation f. Kendall's Tau correlation g. Kendall's Tau correlation
7. Who is typically responsible for conducting FBAs?	No specific hypothesis	18	frequency distributions, percentages, and factor analysis
8. For what reasons are FBAs typically conducted?	No specific hypothesis	19-21	frequency distributions, percentages, and factor analysis
9. Who is typically responsible for collecting data for FBA?	No specific hypothesis	22	frequency distributions, percentages, and factor analysis
10. What types of data are typically collected when an FBA is deemed necessary?	No specific hypothesis	23, 24a, 24b	frequency distributions, percentages, and factor analysis

11a. How often are Behavioral Intervention Plans BIPs written to correspond with the FBA? 11b. Are there occasions during which BIPs are designed and included in the IEP and an FBA has not been conducted?	No specific hypothesis No specific hypothesis	25, 26	frequency distributions, percentages frequency distributions, percentages
12. What is the typical content of an FBA?	No specific hypothesis	28	frequency distributions, percentages, and factor analysis

Research Question 1

To what degree are school psychologists familiar with the term FBA? No specific hypothesis was proposed. Survey item 10 was used to answer this question. Frequency distributions and percentages were used to describe the data.

Research Question 2

To what extent is FBA emphasized in school psychology graduate programs? Survey items 11 and 12 were used to answer this question. Frequency distributions and percentages were initially used to describe the data. In order to more fully explore whether participants who had eight or less years of experience as compared to those with more than eight years of experience were more likely to perceive their masters-level graduate program as having a stronger emphasis on FBA, an independent-samples *t* test was conducted.

Research Question 3

What sources of post-graduate training are school psychologists receiving in FBA? No specific hypothesis was proposed. Survey item 13 was used to answer this question. Frequency distributions and percentages were used to describe the data.

Research Question 4

On average, how many hours of post-graduate training in FBA have school psychologists received? No specific hypothesis was proposed. Survey item 14 was used to answer this question. Frequency distributions and percentages were used to describe the data.

Research Question 5

How typically involved in the FBA process do school psychologists perceive themselves to be? No specific hypothesis was proposed. Survey item 15 was used to answer this question. The variable identified as school psychologists' typical involvement in the FBA process consists of five levels, described as follows: 1 = I am never involved in the FBA process, 2 = I am familiar with aiding the design of BIPs, but never involved in conducting the FBA, 3 = I give all my documentation to a colleague, and he/she/they conduct the FBA, 4 = Writing an FBA is a collaborative process, and I am one member of the team, and 5 = I independently write/conduct the FBA. Frequency distributions and percentages were used to describe the data.

Research Question 6

Is school psychologists' involvement in the FBA process impacted by: a) sex, b) highest degree earned, c) years of experience, d) region employed, e) grade levels of the students served, f) number of students served, or g) socioeconomic status of students served? Data gathered from survey items 2 – 19 and 15 were used to answer this question.

Kendall's Tau correlations were conducted to investigate the impact that the following variables had on school psychologists' involvement in the FBA process: sex, highest degree earned, years of experience, region of the country employed, and number of students served. No specific hypotheses were proposed for these variables.

A specific hypothesis was, however, proposed with regard to the relationship between involvement in the FBA process and the grade levels of the students served. It was postulated that school psychologists are more likely to be involved in the FBA

process if they work with students in the higher grades. Specifically, the question was posed, "Does involvement in the FBA process increase as the grade level of the students served increase?". The rationale for this hypothesis is that older students are more likely to be involved with weapons and drugs, which are mandatory reasons for which FBAs must be conducted as described in the IDEA 1997 and 2004. In order to analyze this question, participants were given a code to delineate the grade levels with which they work (1 = preschool only, 2 = elementary school only, 3 = preschool and elementary school, 4 = middle school, etc.). The school psychologists who served a broad range of grade levels, such as those who service grades K-12, were exempted from this analysis. Once the participants were coded appropriately, a Kendall's Tau correlation was conducted in order to determine whether there was a relationship between involvement in the FBA process and grade levels served.

Another hypothesis was proposed in regard to the relationship between typical involvement in the FBA process and the socioeconomic status of the students served. It was postulated that those school psychologists who served a greater percentage of students identified as "poor" would be more likely to be involved in the FBA process, as these students may be more likely to exhibit serious behavioral concerns. Participants were asked to indicate the percentage of students with whom they work who are poor, lower middle class, middle class, upper middle class, and upper class. In order to analyze the relationship between these two variables, a Kendall's Tau correlation was conducted between the percentage of poor students with whom the school psychologists work, and their level of involvement in the FBA process.

Research Question 7

Who is typically responsible for conducting FBAs? No specific hypothesis was proposed. Survey item 18 was used to answer this question. In addition to the use of frequency distributions and percentages, maximum likelihood factor analysis was used to describe the data.

Research Question 8

For what reasons are FBAs typically conducted? No specific hypothesis was proposed. Survey items 19, 20, and 21 were used to answer this question. In addition to the use of frequency distributions and percentages, maximum likelihood factor analysis was used to describe the data.

Research Question 9

Who is typically responsible for collecting data for FBA? No specific hypothesis was proposed. Survey item 22 was used to answer this question. In addition to the use of frequency distributions and percentages, maximum likelihood factor analysis was used to describe the data.

Research Question 10

What types of data are typically collected when an FBA is deemed necessary? No specific hypothesis was proposed. Survey items 23, 24a, and 24b were used to answer this question. In addition to the use of frequency distributions and percentages, principal components factor analysis was used to describe the data.

Research Question 11a and 11b

How often are Behavioral Invention Plans (BIPs) written to correspond with the FBA? Are there occasions during which BIPs are designed and included in the IEP and an FBA has not been conducted? No specific hypotheses were proposed. Survey items 25 and 26 were used to answer this question. Frequency distributions and percentages were used to describe the data.

Research Question 12

What is the typical content of an FBA? No specific hypothesis was proposed. Survey item 28 was used to answer this question. In addition to the use of frequency distributions and percentages, principal components factor analysis was used to describe the data.

Reliability Analysis

A reliability analysis was conducted using data collected from a small sample of respondents who were randomly chosen to complete the survey a second time. For each question, the method with which reliability was analyzed was dependent upon the type of data collected for each individual question. Specifically, a bivariate correlation was used in order to examine the reliability of survey items which elicited ratio data. However, if data were recorded in a binary format (yes/no), the percentage of overlap between the original responses and the responses on the reliability survey was calculated. Finally, if the participant was forced to check one response from a series of potential responses, Cohen's Kappa was used to calculate concordance between the participants' initial responses and their responses on the second survey.

Summary

This chapter reviewed the methodological procedures used in this study. This study, designed to be exploratory and non-experimental in nature, surveyed a stratified sample of 500 members of NASP regarding their knowledge base and current practices in FBA. The survey instrument was described, as well as the procedures for data collection. The research questions, proposed hypotheses, corresponding survey items, and applied statistic for each research question were discussed.

CHAPTER IV

RESULTS

This chapter presents the results of the data analysis procedures that were presented in Chapter III. The chapter has been divided into four sections. The first section consists of information regarding survey distribution and overall response rate. The second section describes demographic information from the data form and depicts the characteristics of the participants. The third section addresses the specific results of each research question, all of which pertain to school psychologists' current practices in Functional Behavioral Assessment (FBA). Finally, the issue of test-retest reliability will be addressed. The chapter concludes with a brief summary.

Distribution and Return Rate of Survey

The names and addresses of a random sample of 500 school psychologists were obtained from the National Association of School Psychologists (NASP). The sample was stratified to represent all regions of the country. The initial mailing, consisting of a cover letter, the survey, and a self-addressed, stamped envelope, occurred in early September 2006. Precisely 14 days later, a second mailing was directed towards those school psychologists who had not responded. Finally, 30 days after the initial mailing, a third mailing transpired. The cover letter in the third mailing included a brief handwritten note encouraging each participant to respond. Surveys received by January 1, 2007, were included in the data analysis. A total of 326 surveys were returned, which represents 65.2% of the sample. Thirty-nine of the surveys returned were not completed (7.8%), per the researcher's instructions, because the respondents were not school psychologists currently working in the public or private school setting. Therefore, 287

surveys (57.4%) were used in data analysis. Although a portion of the respondents did not answer every item in the survey, all of the data were entered in the SPSS statistical software package for statistical analysis.

Demographic Information

Responses to items on the survey were used to describe the characteristics of the individuals who participated in the study. All demographic characteristics were descriptive of those respondents who identified themselves as a full-or part-time school psychologists currently employed by the public or private school system (N = 287).

Sex, Hours of Employment, Highest Degree Earned, and Years of Experience

Table 3 presents the following demographic information: sex, hours of employment, highest degree earned, and years of experience for the sample of this study as contrasted with the demographic data of the overall NASP database. Briefly summarized, frequency data indicate that the sample was comprised of 18.1% males (n = 52) and 81.9% females (n = 235). A chi-square goodness of fit test was calculated comparing the percentage of males and female in the current study with the percentage of males and females in the NASP population. Results indicate that there was no statistical difference between the two groups (χ^2 (1) = 1.35, $p > .25$).

The vast majority of respondents in this study indicated that they are employed full-time (90.9%, n = 261). No data regarding full vs. part-time employment was provided by NASP. Nearly 82% (n = 235) of the respondents have earned either a master's degree or a specialist degree, while approximately 18% have earned a doctoral degree. A chi-square goodness of fit test was calculated comparing the percentage of respondents who earned a masters, specialist, or doctoral degree with the percentage of

NASP members who earned the same degrees. Results indicate that there were no significant differences between the two groups on this variable (χ^2 (2) = 3.85, p > .25). Of the 52 respondents who earned a doctoral degree, 19.2 % (n = 10) were male, and 80.8% (n = 42) were female.

The mean years of experience for participants in this study was 12.8 (*SD* = 9.20). This can be contrasted with the mean years of experience of NASP members in 2004-2005, which was reported as 14.0 (standard deviation was not reported) (Curtis, Lopez, Castillo, Batsche, Minch, & Smith, 2008). A chi-square goodness of fit test was calculated comparing the mean years of experience of the current sample with that of NASP members. Results indicate that there were no significant differences between the two groups (χ^2 (2) = .10, p > .75).

Table 3

Sex, Hours of Employment, Highest Degree Earned, and Years of Experience of the Survey Respondents

Characteristic	n	Percentage of Sample	Percentage of NASP members 2004-2005	χ^2
Sex				
Male	52	18.1	23.0	
Female	235	81.9	77.0	1.35
Hours of Employment				
40 hours per week	261	90.9	*	
32-39 hours per week	10	3.4	*	
Less than 32 hours per week	16	5.1	*	
Highest Degree Earned				
Masters	95	33.1	35.7	
Specialist	140	48.8	39.9	
Doctorate	52	18.1	24.5	3.85
Years of Experience				
<1-4 years	61	21.3	*	
5-9 years	67	23.3	*	
10-15 years	61	21.3	*	
16-20 years	29	10.1	*	
21-25 years	31	10.8	*	
26-30 years	30	10.4	*	
>30 years	8	2.8	*	

* Data not available **significant at the .05 level

Region of Country

Frequency data indicate that the highest percentages of the respondents reside in the Mid-Atlantic and Great Lakes regions of the country. Specifically, 23.3 % of the participants (n = 67) reside in the Mid-Atlantic region, which is comprised of the following states: Delaware, Maryland, New Jersey, New York, Pennsylvania, and West Virginia. An additional 16.0% (n = 46) of the participants reside in the Great Lakes region. The Great Lakes region is comprised of the following states: Illinois, Indiana,

Michigan, Ohio, and Wisconsin. Table 4 provides a more comprehensive breakdown of the regions in which the respondents live and work. It should be noted that comparative data from NASP was not available.

Table 4

Region of Country Where Survey Respondents Were Employed

Region	States in Region	n	%
New England	CT, ME, MA, NH, RI, VT	30	10.5
Mid-Atlantic	DE, MD, NJ, NY, PA, WV	67	23.3
Mid-South	KY, NC, SC, TN, VA	27	9.4
Deep South	AL, FL, GA, LS, MS	17	5.9
Great Lakes	IL, IN, MI, OH, WI	46	16.0
Upper Plains	IA, MN, NE, ND, SD	18	6.3
South Central	AR, KS, MO, OK, TX	18	6.3
Southwest	AZ, CO, NV, NM, UT	23	8.0
Northwest	ID, MT, OR, WA, WY	13	4.5
Pacific West	AK, CA, HI	28	9.8

Number of Students Served

Participants were asked to indicate the average number of students to whom they provide psychological services. In order to easily compare the current sample to the data provided by NASP (2004-2005), the number of students served was divided into the following ranges: 1-1000, 1001-1500, 1501-2000, and over 2000 students. A chi-square goodness of fit test was calculated comparing the percentage of the average number of students served in current sample to the average number of students served in the NASP population. A significant deviation from the hypothesized values was found (χ^2 (3) = 42.21, $p < .005$), indicating the there was a significant difference between the current sample and the NASP population regarding the number of respondents who service 1001-

1500 students and those who service over 2000 students. Table 5 provides frequency information about the number of students served by the respondents.

Table 5

Number of Students Served, Grade Level, and Populations Served by Survey Respondent as Compared to NASP Membership Data

Characteristics	n	Percentage of sample	Percentage of NASP membership (2004-2005)	χ^2
Number of Students Served				
1-1000	111	39.2	≈ 41.0	
1001-1500	76	26.2	≈ 64.0	
1501-2000	42	14.6	≈ 19.0	
over 2000	44	14.7	≈ 5.0	42.21**
Grade Level				
Pre-K	113	39.4	*	
First	223	77.7	*	
Second	228	79.4	*	
Third	226	79.1	*	
Fourth	226	79.1	*	
Fifth	223	77.7	*	
Sixth	196	68.3	*	
Seventh	171	59.6	*	
Eighth	169	58.9	*	
Ninth	151	52.6	*	
Tenth	148	51.6	*	
Eleventh	147	51.2	*	
Twelfth	147	51.2	*	
Populations Served				
Mental Retardation	257	89.5	*	
Learning Disabilities	275	95.8	*	
Emot./Behavioral Disturbance	278	96.9	*	
Other Health Impairments	274	95.5	*	
Autism Spectrum Disorder	266	92.7	*	
Visually Impaired	158	55.1	*	
Hearing Impaired	174	60.6	*	
Speech/Lang. Impairments	231	80.5	*	
Physical Impairments	195	67.9	*	

* data not available ** significant at the .005 level

Grade Levels

Frequency data indicate that all of the respondents provide psychological services to multiple grade levels. Approximately 40% of the sample provides services to students in pre-kindergarten. Approximately 78.5% of respondents provide services to elementary school-age children, as defined by those students who are in kindergarten through the fifth grade. Approximately 68% of respondents serve students in the sixth grade, and over 50% of respondents provide services to students from the seventh to the twelfth grades. Table 5 provides a further breakdown of the frequency and percentages of participants who provide psychological services to each grade level. It should be noted that comparative data from NASP was not available.

Populations Served

Frequency data indicate that with the exception of four respondents (1.4%), all of the respondents serve students with a variety of educational disabilities. The vast majority of participants (80% and above) provide services to students with mental retardation, learning disabilities, emotional/behavioral disturbance, other health impairments, autism spectrum disorder, and speech and language impairments. Considerably fewer participants provide psychological services to students with visual impairments, hearing impairments, and physical impairments (data displayed in Table 5). It should be noted that comparative data from NASP was not available.

Socioeconomic Status

Greater than ninety two percent (n = 265) of participants who completed the survey reported general information about the socioeconomic status of the students with whom they work. Respondents were asked to indicate the approximate percentage of

students with whom they work who are poor, lower middle class, middle class, upper middle class, and upper class. Table 6 describes the frequency data of the respondents who work with each range of percentage of each SES designation (for example, 73 participants (27.5%) indicate that the population with whom they work is comprised of between 0-10% of poor students). It should be noted that comparative data from NASP was not available.

Table 6

Percentage of Students Served for Each SES Designation by Survey Respondents

	Poor		Lower Middle		Middle		Upper Middle		Upper	
Range	n	%	n	%	n	%	n	%	N	%
0-10 %	111	41.9	66	24.9	52	19.6	159	60.0	247	93.2
11-20 %	43	16.2	76	28.6	47	17.7	50	18.9	9	3.4
21-30 %	26	9.8	68	25.7	70	26.4	24	9.0	5	1.9
31-40 %	17	6.4	25	9.4	29	10.9	14	5.3	3	1.1
41-50 %	22	8.3	19	7.1	32	12.1	9	3.4	1	0.4
51-60 %	9	3.4	8	3.0	18	6.8	1	0.4	0	0.0
61-70 %	20	7.5	2	0.7	12	4.5	6	2.3	0	0.0
71-80 %	8	3.0	0	0.0	4	1.5	2	0.7	0	0.0
81-90 %	3	1.1	0	0.0	0	0.0	0	0.0	0	0.0
91-100%	5	1.9	0	0.0	1	0.4	0	0.0	0	0.0
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Total	27.0	25.78	23.6	14.64	30.5	19.31	14.1	16.74	3.8	7.60

Overall, the sample of the current study appears to closely resemble that of the NASP population. Frequency data provided by NASP revealed that there were no significant differences in highest degree earned, sex of psychologist, and mean years of experience between the current sample and the NASP population. However, statistical analyses indicated that the current sample, when compared to the NASP population, had

an overrepresentation of psychologists who serve between 1001-1500 students and an under representation of psychologists who serve over 2000 students.

Data Analysis of Research Questions

Research Question 1

To what degree are school psychologists familiar with the term FBA? This research question was represented by survey item 10, which required participants to rate their perceived degree of familiarity with the term FBA. Frequency distributions indicate that 94.1% (n = 270) of the participants rated their degree of familiarity with FBA as "I am very familiar with functional behavioral assessments, as they are frequently discussed and/or implemented at my place of work". In contrast, 5.2% (n = 15) of respondents indicated that "I could define this term, but could not describe when and why a FBA should be implemented". Less than 1% (n = 2) indicated that "I have heard of this term, but could not offer an educated definition" or "I am not familiar with this term at all."

Research Question 2

To what extent is FBA emphasized in school psychology graduate programs? This research question was represented by survey items 11 and 12. Survey item 11 required the participants to rate the emphasis that their masters/specialist level graduate program placed on FBA as "little emphasis", "moderate emphasis" or "extensive emphasis". Survey item 12 is similar, because it asked respondents to rate the emphasis that their doctoral program placed on FBA (if applicable). Identical response choices were offered, with the additional response choice of "not applicable; I did not earn a doctoral degree" for question 12. Frequency distributions indicate similarities between masters/specialist programs and doctoral programs in regards to perceived emphasis on

FBA. More specifically, data indicate that of the 286 respondents who assigned a rating to their perceived emphasis of FBA in their masters/specialist program, 61.7% (n = 177) of respondents perceived their masters/specialist program to have "little emphasis" on FBA, 30% (n = 86) indicated their masters/specialist degree program placed "moderate emphasis" on FBA, and 8.0% (n = 23) perceived it to have "extensive emphasis". Of the overall number of respondents, 16.4% (n = 47) reported earning a doctoral degree. Of the participants with doctoral degrees, 57.4% (n = 27) perceived that their doctoral programs placed "little emphasis" on FBA, 29.8% (n = 14) reported that their doctoral program placed "moderate emphasis" on FBA, and 12.8% (n = 6) indicated their program placed "extensive emphasis" on FBA. In order to further examine whether there was a significant difference between perceived emphases of FBA on masters/specialist versus doctoral programs, a series of chi-square goodness-of-fit tests were conducted. It was revealed that there were no differences between the percentage of participants who indicated that their respective masters/specialist or doctoral program placed "little emphasis" on FBA (χ^2 (1) = .322, $p < .50$). Data analysis also indicated that there were no differences between the percentage of participants who indicated that their respective masters/specialist or doctoral program placed "moderate emphasis" on FBA (χ^2 (1) = .001, $p < .90$). Finally, data analysis indicated that there were no differences between the percentage of participants who indicated that their respective masters/specialist or doctoral program placed "extensive emphasis" on FBA (χ^2 (1) = 1.80, $p < .25$). Figure 2 presents these results.

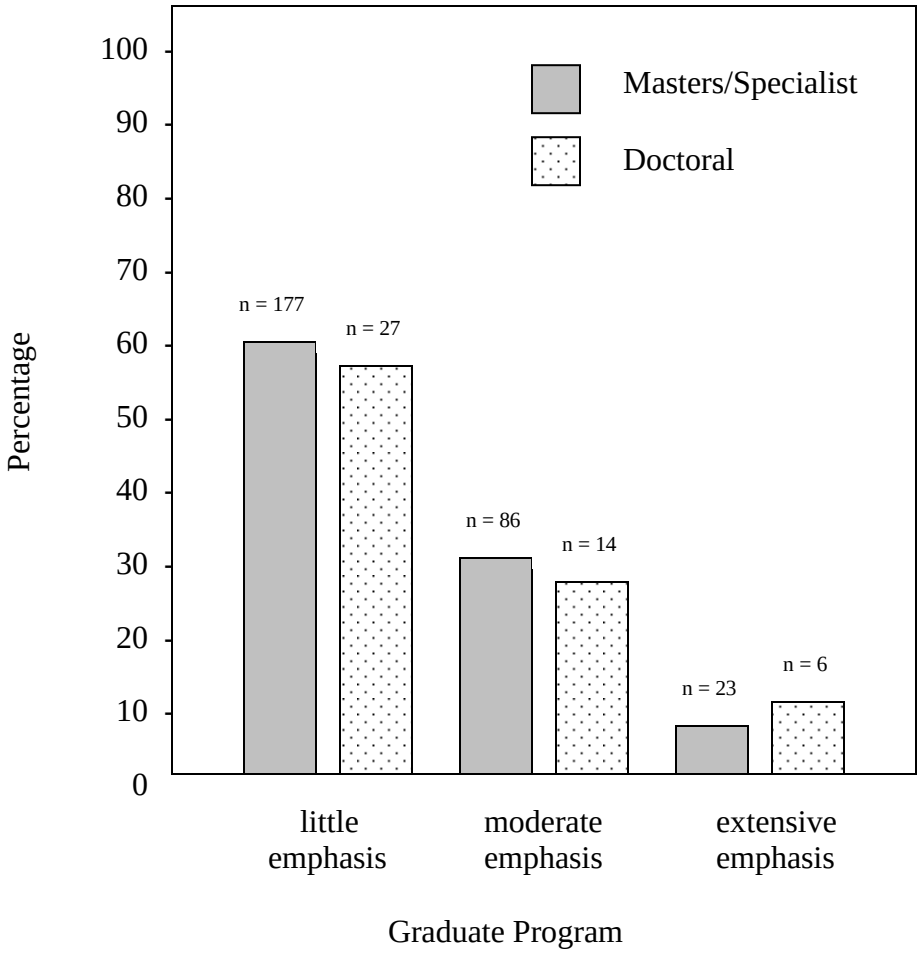

Figure 2. Perceived emphasis of FBA in school psychology graduate school programs by survey respondents holding masters/specialist and doctoral degrees.

Due to the fact that the concept of FBA was first introduced in the IDEA (1997), those participants who completed their training prior to 1997 may have been less likely to graduate from a program with a stronger emphasis on FBA. Since the data were collected in Fall 2006, the sample was recoded in order to compare the perceptions of emphasis on FBA in masters/specialist and doctoral-level graduate programs between two groups of participants: those who had eight or less years of experience as a school psychologist (N = 115, 40.0%), and those who had nine years or more years of experience as a school psychologist (N = 172, 59.9%). An independent-samples t test was conducted

to evaluate the hypothesis that those participants who had eight or less years of experience were more likely to perceive their masters-level graduate program as having a stronger emphasis on FBA. Results were statistically significant, indicating that those respondents with eight years or less of experience did, indeed, perceive their masters/specialist-level graduate program to have a greater emphasis on FBA than those participants with more than eight years of experience as a school psychologist (t (285) = 9.80, p <.001).

A second independent-samples t test was conducted to investigate the hypothesis that those participants who had eight years or less of experience as a school psychologist were more likely to perceive their doctoral-level graduate program as having a stronger emphasis on FBA. Results were not statistically significant, suggesting that respondents with eight years or less of experience do not, in fact, perceive their doctoral program as having a stronger emphasis on FBA than those with more than eight years of experience as a school psychologist (t (285) = .388, p = .69). Results are displayed in Table 7.

Table 7

Perceived Emphasis on FBA in School Psychology Graduate Programs by Survey Respondents

Graduate Program	n	*M*	*SD*	Range	df	*t*	*p*
Masters/Specialist					285	9.80	.00
Eight years or less of experience	115	2.85	.679	1-3			
More than eight years of experience	172	2.19	.463	1-3			
Doctoral					285	.388	.69
Eight years or less of experience	115	1.25	.736	1-3			
More than eight years of experience	172	1.22	.619	1-3			

Note. Emphasis on FBA in graduate program was ranked as the following: 1 = little, 2 = moderate, 3 = extensive.

Research Question 3

What sources of post-graduate training are school psychologists receiving in FBA? This research question is represented by survey item 13, in which participants were asked to "check all that apply" to a series of potential sources of post-graduate training in FBA. Of the 287 participants who responded to this question, 4.5% (n = 13) indicated that they had not received any post-graduate training in FBA. The vast majority of participants (90.9%, n = 261) reported using more than one source for post-graduate training in FBA. Figure 3 displays the percentage of school psychologists who indicated their use of each specific source of training.

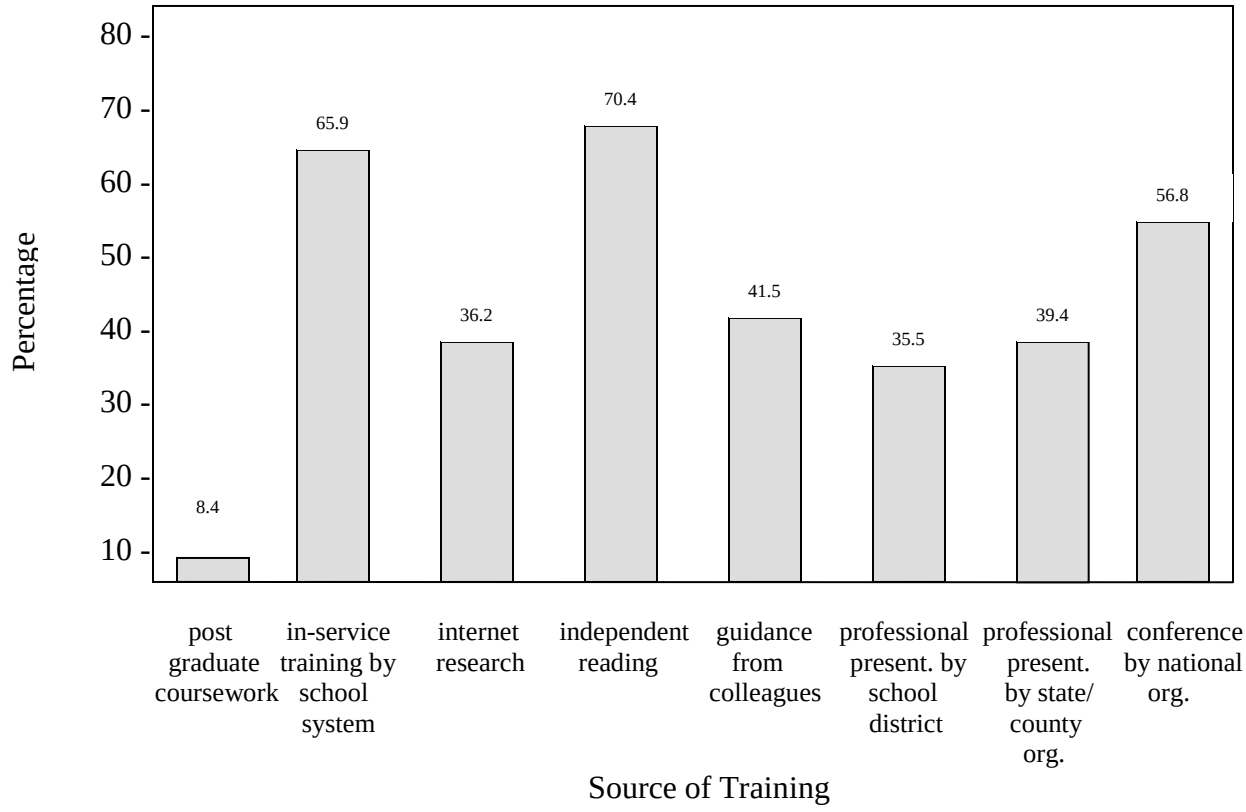

Figure 3. Sources of post-graduate training in FBA by survey respondents.

Research Question 4

On average, how many hours of post-graduate training in FBA have school psychologists received? This research question is represented by survey item 14, in which participants were asked to report the exact number of hours of training obtained in FBA, independent of the training provided by their graduate level school psychology program. A review of data revealed that 89.1% (n = 256) of respondents completed this question. Of the 256 participants who responded to this question, 27.7% (n = 71) obtained between 0-5 hours of training, 25.8% (n = 66) obtained between 6-10 hours, 9.8% (n = 25) obtained between 11-15 hours, 14.5% (n = 37), obtained between 16-20 hours, 5.1% (n = 13) obtained between 21-25 hours, 7.4% (n = 19) obtained between 26-

30 hours, and less than 5% obtained between 31-35 hours, 36-40 hours, and greater than 40 hours, respectively. Descriptive statistics indicate that the *M* = 15.36 hours and *SD* = 15.48 hours. Further detail is exhibited in Figure 4.

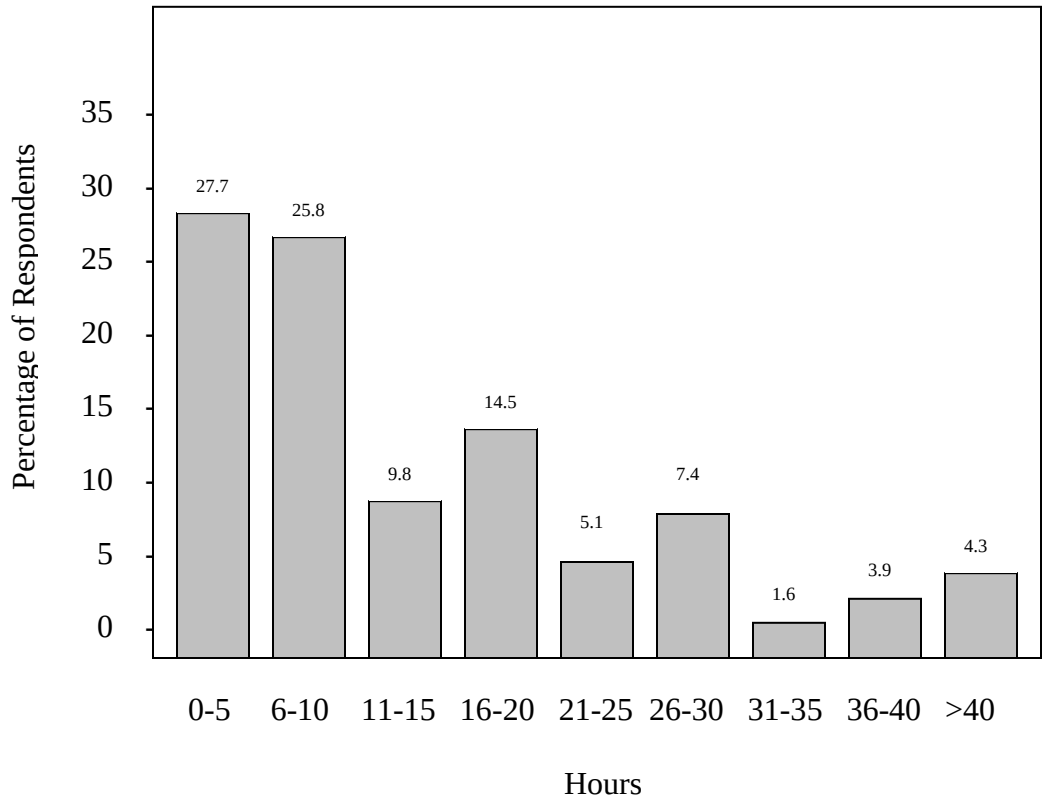

Figure 4. Hours of post-graduate training in FBA obtained by survey respondents.

Research Question 5

How typically involved in the FBA process do school psychologists perceive themselves? This research question is represented by survey item 15. Participants were asked to endorse the item that best described their typical involvement in the FBA process. As presented in Figure 3, 69.7% (n = 200) rated themselves as the following, "Writing an FBA is a collaborative process, I am one member of the team". Sixteen percent (n = 46) of respondents noted that they independently conduct/write FBAs, and

14.3% (n = 41) rated themselves as having minimal involvement by endorsing one of the following, “I give all my documentation of a student’s misbehaviors to a colleague, and he/she/they write the FBA”, “Although I am familiar with aiding in the design of BIPs, I am never involved in conducting an FBA”, or “I never have the responsibility of conducting an FBA”. This information is depicted in Table 8.

Table 8

Perceived Involvement with FBA of Survey Respondents

Perceived Involvement	n	%
I independently conduct/write FBAs.	45	16.0
Writing an FBA is a collaborative process, and I am one member of the team.	200	69.7
I give all my documentation of a student’s misbehaviors to a colleague, and he/she/they conduct/write the FBA.	4	1.4
Although I am familiar with aiding in the design of BIPs, I am never involved in conducting an FBA.	22	7.7
I never have the responsibility of conducting an FBA.	15	5.2

Research Question 6

Is school psychologists’ involvement in the FBA process impacted by: a) sex, b) highest degree earned, c) years of experience, d) region employed, e) grade levels of the students served, f) number of students served, or g) socioeconomic status of students served? The variable identified as school psychologists’ typical involvement in the FBA process consists of five levels, each of which are described in Table 8. It should be noted that although an overall two-way contingency table analysis was initially conducted for

each of the variables and their relationship with typical involvement in the FBA process, it was revealed that a significant percentage of cells were empty and/or contained data from less than five participants, greatly increasing the risk of Type I error. In addition, through the use of a scatterplot, it was revealed that the assumption of normality could not be met for any of the variables investigated, rendering the use of the Pearson *r* correlation impractical. Therefore, a Kendall's Tau correlation was conducted for each variable because it is most resistant to effects of non-normality.

To investigate whether school psychologists' involvement in the FBA process is impacted by sex, a Kendall's Tau correlation was utilized. The two variables investigated were sex (male and female) and typical involvement in the FBA process. Sex and typical involvement in FBA were not found to be related, Kendall's τ (285) = .014, p = .809.

To examine whether school psychologists' involvement in the FBA process is impacted by highest degree earned, a Kendall's Tau correlation was conducted. The two variables examined were the highest degree earned by the school psychologist (masters degree, specialist degree, and doctoral degree) and typical involvement in the FBA process. Highest degree earned and typical involvement in the FBA process were not found to be related, Kendall's τ (285) = .078, p = .145.

To determine whether school psychologists' involvement in the FBA process is impacted by years of experience, a Kendall's Tau correlation was conducted. The two variables studied were years of experience as a school psychologist (divided into the following ranges: 1-4 years, 5-9 years, 10-15 years, 16-20 years, 21-25 years, 26-30 years, and greater than 30 years) and typical involvement in the FBA process. Years of

experience and typical involvement in the FBA process were not found to be related, Kendall's τ (285) = .012, p = .804.

To establish whether school psychologists' involvement in the FBA process is impacted by region of the country employed, a Kendall's Tau correlation was conducted. Refer to Table 4 to see a complete breakdown of region of country. Region of country employed and typical involvement in the FBA process were found not to be related, Kendall's τ (285) = -.051, p = .292.

It was hypothesized that those school psychologists who work with students in the higher grades (such as high school) were more likely to be involved in the FBA process due to the students' increased likelihood of involvement with weapons or drugs. In order to test this hypothesis, each participant was evaluated individually as to which grade range they served. Those school psychologists (n = 114) who served all grades (such as K-12 or Pre-K through 12) were not included in this analysis. Because the remaining participants were coded based on the range of grade levels with which they work (preschool, elementary school, middle school, or high school), a Kendall's Tau correlation was utilized to investigate the question, "Did involvement in the FBA process increase as the grade levels with which they worked increased?". The correlation was not found to be significant, Kendall's τ (172) = -.107, p = .101, suggesting that typical level of involvement in FBA did not increase as the grade levels of the students served increased. See Table 9 below for a breakdown of the participants included in this analysis.

Table 9

Grade Ranges Served by Survey Respondents

Grade Ranges Served	n	%
Pre-K only	8	2.8
Pre-K and Elementary combined	29	10.1
Elementary only	58	20.2
Elementary and Middle School	31	10.8
Middle School only	17	5.9
Middle School and High School combined	8	2.8
High School only	22	7.7

To examine whether school psychologists' involvement in the FBA process is impacted by the number of students served, a Kendall's Tau correlation was conducted. Table 5 presents a complete breakdown of ranges for number of students served. The number of students served and typical involvement in the FBA process was found to have a weak, but significant negative relationship, Kendall's τ (285) = -.127, p = .012. This suggests that as the number of students served increases, typical involvement in the FBA process decreases.

Finally, the relationship between school psychologists' typical involvement in the FBA process and the socioeconomic status (SES) of the students served was explored. Because it was hypothesized that involvement in the FBA process would increase as the percentage of students designated as "poor" increased, a Kendall's Tau correlation was conducted between the percentage of students served who were identified as "poor" and the typical level of involvement in FBA. This correlation indicated that there is a weak, but significant negative relationship between these two variables (τ (285) = -.139, p = .005). This finding contrasts with the directional hypothesis proposed, as it suggests that

as the percentage of students identified as poor increases, the typical level of involvement in the FBA process decreases.

Research Question 7

Who is typically responsible for creating FBAs? This research question was represented by survey item 18. When participants were asked to indicate which individuals are typically responsible for aiding in the completion of an FBA, it was requested that they "check all that apply" to a list of job roles typically found in a school setting. Of the 287 participants, 286 (99.7%) answered this question. Table 10 represents frequency data for each of the job roles presented on the survey.

Table 10

Individuals Responsible for Creating FBA as Indicated by Survey Respondents

Job Role	n	%
School Psychologist	249	86.8
Special Educator	201	70.0
Behavioral Specialist	146	50.9
Regular Educator	141	49.1
School Counselor	113	39.4
Parent(s)	101	35.2
Principal	75	26.1
Student	74	25.8
Special Education Coordinator	59	20.6
Professionals from outside agencies	53	18.5
Wrap-Around Service Professional	29	10.1
Daycare Provider	34	11.8
School Nurse	18	6.3
Psychiatrist	7	2.4
Primary Care Physician	6	2.1
Superintendent/Assistant Superintendent	1	0.3

In order to investigate whether respondents had a tendency to endorse a cluster of individuals typically responsible for creating FBA, maximum likelihood factor analysis was used. Two criteria were used to determine the number of factors to rotate: the scree test and the interpretability of the factor solution. The scree test assists in determining the appropriate number of factors by arranging eigenvalues (which represent variance) in a negatively decreasing order on the abscissa. Eigenvalues with a value of one or higher warrant the most attention, as these variables are most likely to explain the highest percentage of the variance. The slope of the line graph is visually examined to detect changes in slope (Tabachnick & Fidell, 2007). In this instance, the slope altered between factors two and three, suggesting that the first two factors were most appropriate for rotation. Based on the scree plot, these two factors were then rotated using a varimax rotation procedure. As Tabachnick and Fidell (2007) state, "the goal of the varimax rotation is to simplify factors by maximizing the variance of the loadings within factors, across variables. Specifically, the loadings that are high after extraction become higher after rotation and loadings that are low become lower" (p. 638). This greatly eases interpretation of factors, as it is more apparent which variables correlate with a particular factor.

In determining the interpretability of the factor solution, the variables associated with each factor were visually examined. Conceptually, the variables within the two factors appeared to be related. Therefore, the two factors were given the following names: "typical FBA team" and "highly sensitive FBA team". The "typical FBA team" consists of the those individuals who tend to be members of a typical FBA team; teams that are formed to address those behaviors most commonly associated with the

implementation of an FBA in the school setting (an example may be if a student was found with an illegal substance on school property). In contrast, the "highly sensitive FBA team" consists of individuals who may comprise the FBA team if the disruptive behavior was particularly severe (a student placed in a very restrictive educational environment, such as a non-public setting, was discovered with several guns in their possession). The variables associated with these factors and their factor loadings are displayed in Table 11. The "typical FBA team" factor accounted for 16.4% of the item variance, and the "highly sensitive FBA team" factor accounted for 9.2% of the item variance. It should be noted that these two factors accounted for a small proportion of the variance explained (25.2%), suggesting that individuals typically responsible for conducting FBAs cannot be consistently identified based on this data.

Table 11

Correlations between Job Roles and Factors

	Factors	
Job Role	Typical FBA Team	Highly Sensitive FBA Team
Typical FBA Team Job Roles		
Special Educator	**.539**	.004
Regular Educator	**.768**	.002
School Counselor	**.514**	.140
Principal	**.551**	.008
Parent(s)	**.675**	.183
Student	**.603**	.210
Highly Sensitive FBA Team		
Superintendent	-.007	**.545**
School Nurse	.243	**.506**
Physician	.150	**.638**
Psychiatrist	.008	**.566**

Further examination of the data revealed that the job role of "school psychologist" was not present within either factor, despite the fact that 86.8% of participants indicated that school psychologists are typically responsible for creating an FBA (as noted in Table 10). This suggests that there may have been considerable variability in how participants interpreted this question.

Research Question 8

For what reasons are FBAs typically conducted? This research question was represented by survey items 19, 20, and 21. Participants were asked to "check all that apply" to a list of potential reasons for which an FBA might be conducted. Of the 287 participants, 283 answered this question (98.6%). Table 12 represents frequency data for each of the potential reasons for which to conduct an FBA.

Table 12

Reasons Why FBAs are Typically Conducted as Indicated by Survey Respondents

Reasons	n	%
General reasons:		
a. During an initial evaluation, when student deemed eligible, no specific disability	19	6.6
b. Part of process of identifying student with EBD	179	62.4
c. Part of process of identifying student with OHI (inc. ADHD)	58	20.2
When a student in the regular education program:		
a. Engages in chronic disruptive behavior	145	50.5
b. Engages in mildly aggressive behavior, chronic disrespect, chronic non-compliance	142	49.5
c. Is found with weapons, drugs, or alcohol on property	85	29.6
d. Engage in physical aggression that has potential to harm self/others	156	54.4
When a student in the special education program:		
a. Engages in chronic disruptive behavior	213	74.2
b. Engages in mildly aggressive behavior, chronic disrespect, chronic non-compliance	208	72.5
c. Is found with weapons, drugs, or alcohol on property	154	53.7
d. Engage in physical aggression that has potential to harm self/others	239	83.3
Other:		
a. When a student in the reg. educ. program is suspended for more than 10 school days	64	22.3
b. When a student in the spec. educ. program is suspended for more than 10 school days	197	68.6
c. When a student in the spec. educ. program is being considered for placement in a more restrictive environment	176	61.3
d. When a student is transitioning from a regular education environment to an alternative education center	68	23.7
e. When a student enrolled in an alternative education center is displaying significant behavioral problems	118	41.1

Note. EBD = Emotional/Behavioral Disturbance, OHI = Other Health Impairment, ADHD = Attention Deficit/Hyperactivity Disorder

In order to investigate whether respondents had a tendency to endorse a cluster of items illustrating the potential reasons why an FBA might be conducted, maximum

likelihood factor analysis was used. Two criteria were used to determine the number of factors to rotate: the scree test and the interpretability of the factor solution. Based on the scree plot, two factors were rotated using a varimax rotation procedure. The rotated solution, as shown in Table 13, yielded three interpretable factors, named "regular education reasons to conduct an FBA", "special education reasons to conduct an FBA", and "chronic disruptive behavioral reasons". The regular education reasons accounted for 13.0% of the item variance, the special education reasons accounted for 9.9% of the item variance, and chronic disruptive behavioral reasons accounted for 8.8% of the item variance. One item, described as "a student in the special education program who engages in physical aggression that has the potential to harm self and others", loaded on both the regular education reasons factor and the special education reasons factor. Once again, it should be noted that a relatively small portion of the variance is explained (31.7%), suggesting that the generalizability of these results may be limited.

Table 13

Correlations between Reasons to Conduct FBA and Factors

Reasons to Conduct FBA	Factors		
	Regular Education	Special Education	Chronic Disruption
Regular Education Reasons			
a. Engages in mildly aggressive behavior, chronic disrespect, or chronic non-compliance	**.562**	.166	.307
b. Is found w/ weapons, drugs or alcohol on property	**.580**	.145	-.006
c. Engages in physical aggression that has the potential to harm self and others (reg. educ)	**.906**	.007	.007
d. Engages in physical aggression that has the potential to harm self and others (spec. educ)	**.436**	**.390**	-.295
e. When student is suspended for more than 10 school days	**.350**	.160	.155
Special Education Reasons			
a. As part of the process of identifying a student with an EBD	.004	**.417**	.191
b. As part of the process of identifying a student with an Other Health Impairment (incl. ADHD)	-.003	**.421**	.145
c. Engages in mildly aggressive behavior, chronic disrespect, chronic non-compliance	.102	**.357**	.000
d. Is found with weapons, drugs or alcohol on property	.265	**.445**	-.152
e. When a student is suspended for more than 10 school days	.117	**.371**	-.001
f. When a student in spec. educ. is being considered for placement in a more restrictive environment	.007	**.428**	-.002
g. When a student is transitioning from a reg. educ. to an alternative education center	.241	**.355**	.123
h. When a student enrolled in an alternative education center is displaying significant behavioral problems	.173	**.374**	.008
Chronic Disruptive Behavior Reasons			
a. When a student in the regular education program engages in chronic disruptive behavior	.333	-.003	**.942**
b. When a student in the special education program engages in chronic disruptive behavior	-.006	.185	**.461**

Research Question 9

Who is typically responsible for collecting data for FBA? This research question was represented by survey item 22. When participants were asked to indicate which individuals are typically responsible for collecting data on the student's behavior in preparation for completing an FBA, it was requested that they "check all that apply" to a list of job roles typically found in a school setting. Of the 287 participants, 284 (99.0%) answered this question. Table 14 represents frequency data for each of the job roles presented on the survey.

Table 14

Individuals Responsible for Collecting Data for FBA

Job Role	n	%
School Psychologist	238	82.9
Special Educator	228	79.4
Students' Regular Educator	156	54.4
Behavioral Specialist	123	42.9
School Counselor	79	27.5
Parent(s)	41	14.3
Student	29	10.1
Professionals from outside agencies	25	8.7
Principal	22	7.7
Special Education Coordinator	21	7.3
Wrap-Around Service Professional	16	5.6
School Nurse	15	5.2
Daycare Provider	9	3.1
Psychiatrist	2	0.7
Primary Care Physician	1	0.3
Superintendent/Assistant Superintendent	1	0.3

In order to investigate whether a specific cluster of school professionals are typically involved in collecting data for an FBA, principal components factor analysis

was used to determine if factor rotation was appropriate. A perusal of eigenvalues and the scree plot did not reveal the presence of specific factors (Tabachnick & Fidell, 2007), making factor rotation unnecessary. Therefore, it was determined that no particular cluster of individuals can be identified as assuming the responsibility of collecting data to be used in an FBA.

Research Question 10

What types of data are typically collected when an FBA is deemed necessary? This research question was represented by survey items 23, 24a and 24b. When participants were asked to indicate which methods are typically used to collect data on the student's behavior, it was requested that they "check all that apply" to a list of both direct and indirect measures of assessment. Of the 287 participants, 283 (98.6%) answered this question. Table 15 represents frequency data for each of the data collection methods presented on the survey.

Table 15

Methods of Data Collection by Survey Respondents

Methods	n	%
Indirect Measures		
Record review	252	87.8
Surveys/rating scales given to student	134	46.7
Surveys/rating scales given to teachers	209	72.8
Surveys/rating scales given to parents	178	62.0
Interview with student	192	66.9
Interview with 1 teacher	116	40.4
Interview with 2 or more teachers	217	75.6
Interview with parents	213	74.2
Direct Measures		
Completing 1 observation	50	17.4
Completing 2 observations	112	39.0
Completing 3 observations	98	34.1
Completing 4 or more observations	76	26.5

In order to investigate whether participants typically endorsed a specific cluster of responses in regards to the typical methods of data collection used to conduct an FBA, principal components factor analysis was used. Although principal components factor analysis did not reveal the presence of specific factors, it was revealed that one primary cluster of data collection methods was apparent: survey to student (r = .811), survey to teachers (r = .750), survey to parents (r = .822), interview with student (r = .610), and interview with parent (r = .577).

In order to further examine the details surrounding observation, a direct measure of assessment typically used to collect data on a student's behavior, two follow-up questions were asked (items 24a and 24b). Frequency data indicates that 268 (93.4%) participants responded to these questions. The first question asked, "If the student is

observed on more than one occasion, are the observations conducted in more than one setting (such as in a classroom and on the playground?". Two hundred and forty-seven respondents (92.1% of the 268 respondents who answered this question) indicated "yes". The second question asked, "If the student is observed on more than one occasion, are the observations conducted by more than one observer (such as by two different teachers, or by the school psychologist and a teacher?". One hundred and ninety-five respondents (72.7% of the 268 respondents who answered this question) indicated "yes".

Research Questions 11a and 11b

How often are Behavioral Intervention Plans (BIPs) written to correspond with the FBA? This research question is represented by survey item 25, in which the participants were first asked, "Are there occasions during which an FBA is written and a corresponding BIP is not?". If the participant responded affirmatively, they were asked to estimate the approximate percentage of time this occurs. Data indicates that 278 (96.8%) of participants responded to this question. A frequency distribution indicates that 60.3% (n = 173) of respondents indicated that BIPs are always designed after the creation of an FBA. Although 36.6% (n = 105) of participants indicated that there are occasions in which BIPs are not designed to correspond with FBAs, only 90 (31.3%) responded to the question, "Approximately what percentage of the time is an FBA written and a corresponding BIP is not?". Table 16 further describes the frequency with which this occurs.

Are there occasions during which BIPs are designed and included in the IEP and an FBA has not been conducted? This research question is represented by survey item 26. Of the 284 (99.0%) participants who answered this question, 137 (47.7%) indicated

that there are occasions during which BIPs are designed and included in the IEP and are not accompanied by an FBA. Yet when those who responded affirmatively were asked, "What percentage of the time is a BIP created and included in the IEP and an FBA has not been conducted?", only 122 (89.0%) of the participants responded. Table 16 portrays the frequency distribution associated with this situation.

Table 16

Frequency in which FBA is Accompanied without a BIP, and BIP is Included in IEP without an FBA

	FBA conducted; no BIP		BIP included in IEP; no FBA conducted	
Percentage of estimated occurrences	n	% of respondents who answered this question (N = 90)	n	% of respondents who answered this question (N=122)
1-20%	50	55.6	42	30.7
21-40%	19	21.1	50	36.5
41-60%	18	20.0	31	22.6
61-80%	3	3.3	11	8.0
81-100%	3	3.3	13	9.5

Research Question 12

What is the typical content of an FBA? This research question was represented by survey item 28. When participants were asked to indicate which information is typically included in an FBA, it was requested that they "check all that apply" to a list of

17 descriptive phrases that represented information potentially included in an FBA. Of the 287 participants, 284 (99.0%) answered this question. Table 17 represents frequency data for each of the descriptive statements presented on the survey.

Table 17

Typical Content of an FBA as Indicated by Survey Respondents

Content	n	%
All problem behaviors, even if they are numerous	51	17.8
Three or less problem behaviors that most impact the student's success in school	217	75.6
Four or more problem behaviors that most impact the student's success in school	20	7.0
Academic strengths of student	181	63.1
Behavioral strengths of student	211	73.5
Student interests	153	53.3
Setting events/events that make the problem behavior more likely to occur	269	93.7
Description of frequency of the problem behavior	270	94.1
Description of severity of the problem behavior	257	89.5
Description of duration of the problem behavior	245	85.4
Description of the desired or replacement behavior	242	84.3
Antecedents	271	94.4
Maintaining functions of problem behavior	245	85.4
Consequences/events that occur as result of problem behavior	272	94.8
Hypotheses summary statement	209	72.8
A description as to how the hypothesized function of the problem behavior was tested/confirmed	73	25.4
Description of how data was collected	158	55.1

In order to investigate whether participants typically endorsed a specific cluster of responses in regards to the typical content of an FBA, principal components factor analysis was used. Although principal components factor analysis did not reveal the presence of specific factors, it was revealed that one primary cluster of responses was consistently endorsed: academic strengths (r = .445), behavioral strengths (r = .541),

student interests (r = .498), setting events (r = .691), frequency (r = .640), severity (r = .538), duration (r = .605), replacement behavior (r = .482), antecedents (r = .649), maintaining functions (r = .620), consequences (r = .677), hypotheses summary statement (r = .582).

Test-Retest Reliability Analysis

In order to assess the test-retest reliability of several of the survey items, surveys identical to the original survey were mailed approximately two months after the initial mailing. A random sample of 28 participants (10% of the respondents) were mailed a reliability survey, 19 (67.9%) of whom responded.

Although the entire survey was re-administered, only the responses to the following survey questions were submitted for reliability analysis: 10, 13, 15-26, and 28. These survey items were deemed the most pertinent to the investigation. For each question, the method with which reliability was analyzed was dependent upon the type of data collected for each individual question. Specifically, a bivariate correlation was used to examine the reliability of survey items which elicited ratio data. This method of reliability analysis was most appropriate for examining the reliability of survey items 16, 17, 25b, and 26b. In contrast, if the data were recorded in a binary format (yes/no), the percentage of overlap between the original responses and the responses on the reliability survey was calculated. This method of reliability analysis was deemed most appropriate to assess the reliability of survey items: 13, 18-24, 25a, 26a, and 28. Finally, if the participant was forced to check one response from a series of potential responses, Cohen's Kappa was used to calculate concordance between the participants' initial

responses and their responses on the second survey. This method of reliability analysis was most appropriate to examine the reliability of survey items: 10 and 15.

Once a reliability analysis was conducted for each response within each survey item assessed, an overall level of reliability was calculated for each survey question by calculating the mean. Based on the mean reliability score, a rating was assigned: reliability between 80%-100% (.80-1.00) was classified as "excellent", reliability between 60%-80% (.60-.80) was classified as "good", reliability between 40%-60% (.40-.60) was classified as "moderate", reliability between 20%-40% (.20-.40) was classified as "fair", and reliability between 0%-20% (.00-.20) was classified as "poor" (http://www.childrensmercy.org/stats/definitions/kappa.htm).

Reliability was first examined for survey question 10, in which participants were asked, "How familiar are you with the term FBA?". A Cohen's kappa revealed perfect agreement between the two samples ($\kappa = 1.00$). Therefore, the reliability of survey question 10 was classified as excellent.

The remainder of the survey questions for which the reliability was investigated is presented in Tables 18 through 26.

Presented in Table 18 is the reliability data for survey question 13, which describes the sources of post-graduate training in FBA. Using the percentage of agreement between each of the original responses and those of the reliability sample, a mean was calculated ($M = 83.03$). Due to the fact that the overall reliability for survey question 13 surpassed 80% agreement, the level of reliability was deemed to be excellent.

Table 18

Reliability Data for Survey Question 13: Sources of Post-Graduate Training in FBA

Sources of Training in FBA	Percentage of Agreement
No post-graduate training in the FBA process	100.0
Graduate study coursework supplemental to certification program	89.5
In-service training provided by school system	78.9
Research for the internet	89.5
Independent reading	78.9
Role modeling/informal instruction from colleagues	68.4
Professional presentation sponsored by school district	73.7
Professional presentation sponsored by county or state organization	84.2
State or national conference provided by professional organization	84.2

Presented in Table 19 is the reliability data for survey question 15, which inquired about the typical level of involvement in the FBA process. Using Cohen's Kappa to examine reliability between each of the original responses and those of the reliability sample (κ = .545), the level of reliability was deemed to be moderate.

Table 19

Reliability Data for Survey Question 15

Survey Question	Cohen's kappa
15. "What is your typical level of involvement in the FBA process?"	.545*

*Moderate agreement = .40 to .60

Presented in Table 20 is the reliability data for survey questions 16 and 17, which inquired about the number and percentage of FBAs in which the respondents have been

typically involved. It should be noted that on three occasions, participants endorsed a response on the original survey, but left the item blank on the reliability survey. Therefore, the reliability was analyzed only after these participants were extracted from the sample. A bivariate correlation examining the reliability between the original survey and the reliability survey with regards to the percentage of FBAs in which respondents were typically involved, the level of reliability was deemed to be moderate. In contrast, a bivariate correlation examining the reliability between the original survey and the reliability survey with regards to the approximate number of FBAs in which respondents were typically involved, the reliability was deemed to be excellent.

Table 20

Reliability Data for Survey Questions 16 and 17

Survey Question	r
16. "Of the total number of FBAs that are conducted in the school(s) in which you serve, with what percentage are you typically involved?"	.595*
17. "With approximately how many FBAs have you personally been involved in the past 12 months?"	.859**

* Moderate agreement = .40 to .60
** Excellent agreement = .80 to 1.00

Presented in Table 21 is the reliability data for survey question 18, which inquires about the individuals typically responsible for creating an FBA. Using the percentage of agreement between each of the original responses and those of the reliability sample, a mean was calculated (M = 83.55). Due to the fact that the overall reliability for survey question 18 surpassed 80% agreement, the level of reliability was deemed to be excellent.

Table 21

Reliability Data for Survey Question 18: Individuals Typically Responsible for Creating an FBA

Job Roles	Percentage of Agreement
Behavioral Specialist	89.5
School Psychologist	89.5
Special Educator	73.7
Special Education Coordinator	68.4
Regular Educator	68.4
Principal	68.4
Wrap Around Service Professional	89.5
Superintendent/Assistant Superintendent	100.0
School Nurse	100.0
Primary Care Physician	100.0
Psychiatrist	94.7
Parent	68.4
School Counselor	68.4
Student	84.2
Outside Professionals	73.7
Daycare Provider	100.0

Presented in Table 22 is the reliability data for survey questions 19, 20, and 21, each of which inquire about the reasons for which FBA is typically conducted. Using the percentage of agreement between each of the original responses and those of the reliability sample, a mean was calculated (M = 72.36). Due to the fact that the overall reliability for survey questions 19, 20, and 21 fell between 60% and 80%, the level of reliability was deemed to be good.

Table 22

Reliability Data for Survey Questions 19, 20, and 21: Reasons Why FBAs are Typically Conducted

Reasons	Percentage of Agreement
General reasons:	
a. During an initial evaluation, when student deemed eligible, no specific disability	94.7
b. Part of process of identifying student with EBD	63.2
c. Part of process of identifying student with OHI (including ADHD)	68.4
When a student in the regular education program:	
a. Engages in chronic disruptive behavior	57.9
b. Engages in mildly aggressive behavior, chronic disrespect, chronic non-compliance	73.7
c. Is found with weapons, drugs, or alcohol on property	68.4
d. Engage in physical aggression that has potential to harm self/others	68.4
When a student in the special education program:	
a. Engages in chronic disruptive behavior	63.2
b. Engages in mildly aggressive behavior, chronic disrespect, chronic non-compliance	73.7
c. Is found with weapons, drugs, or alcohol on property	68.4
d. Engage in physical aggression that has potential to harm self/others	73.7
Other:	
a. When a student in the reg. educ. program is suspended for more than 10 school days	84.2
b. When a student in the spec. educ. program is suspended for more than 10 school days	78.9
c. When a student in the spec. educ. program is being considered for placement in a more restrictive environment	68.4
d. When a student is transitioning from a regular education environment to an alternative education center	84.2
e. When a student enrolled in an alternative education center is displaying significant behavioral problems	68.4

Presented in Table 23 is the reliability data for survey question 22, which inquires about the individuals typically responsible for collecting data for FBA. Using the percentage of agreement between each of the original responses and those of the reliability sample, a mean was calculated (M = 90.45). Due to the fact that the overall reliability for survey questions surpassed 80% agreement, the level of reliability was deemed to be excellent.

Table 23

Reliability Data for Survey Question 22: Individuals Responsible for Collecting Data for FBA

Job Role	Percentage of Agreement
School Psychologist	84.2
Special Educator	84.2
Students' Regular Educator	78.9
Behavioral Specialist	89.5
School Counselor	68.4
Parent(s)	94.7
Student	89.5
Professionals from outside agencies	84.2
Principal	94.7
Special Education Coordinator	89.5
Wrap-Around Service Professional	94.7
School Nurse	94.7
Daycare Provider	100.0
Psychiatrist	100.0
Primary Care Physician	100.0
Superintendent/Assistant Superintendent	100.0

Presented in Table 24 is the reliability data for survey question 23, which describes the methods of data collection for FBA. Using the percentage of agreement between each of the original responses and those of the reliability sample, a mean was

calculated (M = 74.55). Due to the fact that the overall reliability for survey question 23 fell between 60% and 80%, the level of reliability was deemed to be good.

Table 24

Reliability Data for Survey Question 23: Methods of Data Collection

Methods	Percentage of Agreement
Indirect Measures	
Record review	84.2
Surveys/rating scales given to student	78.9
Surveys/rating scales given to teachers	73.7
Surveys/rating scales given to parents	73.7
Interview with student	78.9
Interview with 1 teacher	78.9
Interview with 2 or more teachers	63.2
Interview with parents	84.2
Direct Measures	
Completing 1 observation	57.9
Completing 2 observations	68.4
Completing 3 observations	68.4
Completing 4 or more observations	84.2

Presented in Table 25 is the reliability data for survey questions 24, 25, and 26, all of which examine the use of observation as a method of data collection. For those survey questions which simply required a yes/no answer, a percentage of agreement was used to determine reliability between each of the original responses and those of the reliability sample. The calculated mean (M = 72.35) resulted in a level of reliability classified as good. Questions 25b and 26b, in contrast, utilized a bivariate correlation to assess reliability. While question 25b resulted in excellent reliability (r = 1.00), question 26b revealed only moderate agreement.

Table 25

Reliability Data for Survey Questions 24, 25, 26: Use of Observation as a Method of Data Collection

Survey Question	statistic	result
24a. If the student is observed on more than one occasion, are the observations conducted in more than one setting?	percentage of agreement	84.2
24b. Is the student is observed on more than one occasion, are the observations conducted by more than one observer?	percentage of agreement	73.7
25. Are there occasions during which an FBA is written and a corresponding BIP is not?	percentage of agreement	52.6
25a. If yes, approximately what percentage of time?	pearson's r	1.00
26. Are there occasions during which a BIP is created and included in the IEP and an FBA has not been conducted?	percentage of agreement	78.9
26a. If yes, approximately what percentage of time?	pearson's r	.432

Presented in Table 26 is the reliability data for survey question 28, which describes the typical content of an FBA. Using the percentage of agreement between each of the original responses and those of the reliability sample, a mean was calculated (M = 83.88). Due to the fact that the overall reliability for survey question 28 surpassed 80% agreement, the level of reliability was deemed to be excellent.

Table 26

Reliability Data for Survey Question 28: Typical Content of an FBA

Content	Percentage of Agreement
All problem behaviors, even if they are numerous	84.2
Three or less problem behaviors that most impact the student's success in school	89.5
Four or more problem behaviors that most impact the student's success in school	94.7
Academic strengths of student	78.9
Behavioral strengths of student	78.9
Student interests	68.4
Setting events/events that make the problem behavior more likely to occur	89.5
Description of frequency of the problem behavior	89.5
Description of severity of the problem behavior	94.7
Description of duration of the problem behavior	89.5
Description of the desired or replacement behavior	100
Antecedents	78.9
Maintaining functions of problem behavior	84.2
Consequences/events that occur as result of problem behavior	84.2
Hypotheses summary statement	68.4
A description as to how the hypothesized function of the problem behavior was tested/confirmed	73.7
Description of how data was collected	78.9

Overall, the results of the test-retest reliability analyses were variable. Several survey items yielded excellent reliability; specifically, those items referring to perceived familiarity with FBA, sources of post-graduate training in FBA, approximate number of FBAs in which respondents have been involved in the last 12 months, the individuals typically responsible for creating FBA, the individuals typically responsible for collecting data for FBA, and the typical content in FBA. Other items, such as those items inquiring about reasons why FBA is conducted and methods of data collection, yielded good reliability. Finally, moderate reliability was obtained for the survey item which asked

respondents to note their overall involvement in the FBA process and the survey item which indicated the percentage of FBAs in which respondents were typically involved.

Summary

This chapter presented detailed results of the data analysis procedures that were initially presented in Chapter III. The four sections of this chapter included: information regarding survey distribution and overall response rate, demographic information from the data form and a description of the characteristics of the participants, the specific results of each research question, all of which pertain to school psychologists' current practices in FBA and finally, the results of the test-retest reliability analysis.

CHAPTER V

DISCUSSION

Functional Behavioral Assessment (FBA), a proactive assessment strategy which seeks to identify the function of a student's problem behaviors, has earned significant attention in the literature since its inception in the IDEA (1997) (Gresham, 2004; Sterling-Turner et al., 2001; Witt, Daly, & Noell, 2000). Particular emphasis has been placed on defining the concept of FBA (Gresham, 2004; Horner & Carr, 1997; Witt et al., 2000), applying FBA to specific populations of individuals with disabilities (Rogers, 2001; Umbreit, 1995), proposing strategies to effectively conduct FBA (Deno, 1992; Fuchs & Fuchs, 1990; Jolivette et al., 2000; Mash & Terdal, 1997; Sterling-Turner et al., 2001; Yell & Drasgow, 2000), and describing the consequences of failing to conduct FBA in compliance with the IDEA (1997) and the IDEA (2004) (Yell & Drasgow, 2000; Yell, Katsiyannis, Bradley, & Rozalski, 2000; Van Acker, Boreson, Gable, & Potterton, 2005). However, there is a dearth of research exploring the extent to which FBA is utilized in the school setting, despite evidence that suggests that school districts are struggling to meet the minimum standards of FBA as mandated by the IDEA (1997 and 2004) (Drasgow & Yell, 2001; Yell, Katsiyannis, Bradley, & Rozalski, 2000; Gable and Hendrickson, 1999). Until research explores the reasons and methods by which FBAs are conducted in the schools, little can be done to remediate the weaknesses of current FBA practices.

The proposed study was designed to be an exploratory investigation of school psychologists' current practices in FBA. Specifically, school psychologists were surveyed regarding demographic information, familiarity with the concept of FBA,

typical involvement in the FBA process, sources of training in FBA, individuals and methods typically responsible for conducting FBA, reasons for which FBA is typically conducted, individuals and methods associated with data collection, and overall content included in FBA. From these data, it is hoped that general conclusions regarding the use of FBA by school psychologists on a nation-wide basis can be identified.

Discussion of Research Questions

The following section of this chapter offers a detailed discussion of the results of this study. Each research question will be stated, its most relevant results summarized, and its implications discussed.

Research Question 1

To what degree are school psychologists familiar with the term FBA? Results indicate that 94.1% of participants perceive themselves to be "very familiar" with FBA, as FBAs are "frequently discussed and/or implemented at my place of work". This statistic suggests that the vast majority school psychologists consider themselves to be well-versed in FBA, regardless of the frequency or capacity in which he/she is involved in the FBA process.

Research Question 2

To what extent is FBA emphasized in school psychology graduate programs? The majority of participants (61.7% of masters-level psychologists, and 57.4% of doctoral-level psychologists) report that their graduate program provided "little emphasis" on FBA. Less than 17% of masters-level psychologists and less than 13% of doctoral level psychologists indicate that their graduate program provided "extensive emphasis" on FBA. However, due to the fact that many of the psychologists surveyed

may have graduated from their school psychology graduate program prior to the implementation of the IDEA (1997), it was hypothesized that these school psychologists are less likely to perceive their graduate program as placing considerable emphasis on FBA. Data revealed that those respondents with eight years or less experience did, indeed, perceive their masters-level graduate program to have a significantly higher emphasis on FBA than those psychologists who had greater than eight years of experience. However, this finding was not replicated for those respondents who earned a doctoral degree. This finding may be due to the fact that this study did not collect data on the length of time which lapsed between the conclusion of doctoral coursework and the conferment of a doctoral degree. Since doctoral programs can vary considerably in length, it is difficult to judge based on years of experience as a school psychologist how recent coursework in FBA may have been.

Research Question 3

What sources of post-graduate training are school psychologists receiving in FBA? Less than 5% of respondents reported that they have never received post-graduate training in FBA. Over 90% of respondents reported using more than one source for post-graduate training in FBA. Over 70% reported that one of these sources consisted of independent reading, over 65% reported obtaining information from in-service training provided by the school system, and over 56% supplemented their knowledge base by attending a state or national conference provided by a professional organization such as NASP or a state psychology association. These data indicate that many school systems are assisting school psychologists with enhancing their knowledge level in FBA, although

the vast majority of school psychologists feel it is necessary to supplement their knowledge through the use of independent study.

Research Question 4

On average, how many hours of post-graduate training in FBA have school psychologists received? The results indicate that the mean number of hours is 15.36 (*SD* = 15.48), although 53.5% of respondents report that they have received 10 or less hours of post-graduate training in FBA.

Research Question 5

How typically involved in the FBA process do school psychologists perceive themselves? Nearly 70% of school psychologists endorsed the following response, "Writing an FBA is a collaborative process, I am one member of the team". This conforms to Myers & Holland's (2000) best practice recommendation, as they state that FBA should be conducted in a consultative process by a qualified school-based team. In this manner, various team members can apply their professional expertise to the process. Sixteen percent of respondents indicated that they write the FBA independently, and 14.3% indicate having little to no involvement in the FBA process. Overall, this data indicates that nearly 86% of school psychologists are honoring the mandates established by the IDEA (2004).

Research Question 6

Is school psychologists' involvement in the FBA process impacted by: a) sex, b) highest degree earned, c) years of experience, d) region employed, e) grade levels of the students served, f) number of students served, or (g) socioeconomic status of the students served? Typical level involvement in the FBA process was rated on the following scale:

1 = I am never involved in the FBA process, 2 = I am familiar with aiding the design of BIPs, but never involved in conducting the FBA, 3 = I give all my documentation to a colleague, and he/she/they conduct the FBA, 4 = Writing an FBA is a collaborative process, and I am one member of the team, and 5 = I independently write/conduct the FBA.

The relationship between typical level of involvement in the FBA process and each of the variables presented above were analyzed using a Kendall's Tau correlation. It was revealed that the sex of the school psychologist and the typical level of involvement in FBA process were not found to be related; no directional hypothesis had been proposed. Similarly, the highest degree earned by the school psychologist and the typical level of involvement in FBA process were not found to be related; no directional hypothesis had been proposed. Years of experience and typical level of involvement in the FBA process were also deemed unrelated; no directional hypothesis was proposed. Finally, region of the country in which the psychologist worked was not found to be related to the typical level of involvement in the FBA process; no directional hypothesis was proposed.

In contrast to the above mentioned variables, which were not associated with specific hypotheses, it was hypothesized that as the grade level of the students served increased, the typical level of involvement in the FBA process would also increase. This suspicion was based on research which indicates that older students are more likely to require intervention through the use of FBA than younger students, as older students have greater access to drugs and weapons than younger students (Barbarin et al., 2006; Durant, Krowchuk, Kreiter, Sinal, & Woods, 1999; Forrest, Zychowski, Stuhldreher, and

Ryan, 2000). Results indicate that the relationship between these variables was not found to be significant.

Possible reasons were explored to explain why the results of this study suggest that FBA is conducted with students of all ages, rather than primarily with older students. Research suggests that students with limited communication skills, such as those students identified with Autism Spectrum Disorder, intellectual deficiencies, and other, more generalized communication disorders, are most at risk for exhibiting challenging behaviors at a young age (Conroy et al., 2005; Fucilla, 2005). Conroy, Dunlap, Clarke, and Alter (2005) completed a comprehensive review of experimental studies conducted with preschool children, and revealed that FBA and other empirically-based methods were increasingly used to design effective interventions for young children. They note that research with younger children with challenging behavior remains in its infancy, as evidenced by the prevalence of single-subject research designs. In addition, media attention has focused on the increasing number of students identified with Autism Spectrum Disorder in recent years. As Safran (2008) reports, governmental records indicate that the number of students between the ages of 3 to 22 identified with autism has experienced an increase of approximately 528% between the years of 1992-1993 and 2001-2002, with the largest number of children identified between the ages of seven and nine years old. In light of this research, it is not surprising that the current study indicates that FBA is an assessment tool that is used with students of all ages who exhibit challenging behaviors.

Although a directional hypothesis was not proposed to explain a potential relationship between the number of students served and the typical level of involvement

in the FBA process, a weak but significant negative relationship was found to be present. It should be noted that although the relationship reached clinical significance (Kendall's τ (285) = -.127, p = .012), meaningfulness is questionable. Due to the fact that the correlation coefficient was so small, it would be inappropriate to make generalizations about the relationship between these two variables based on the results of this study.

Finally, the relationship between socioeconomic status of the students served and typical level of involvement in the FBA process was explored. It was hypothesized that as the percentage of students designated as "poor" increased, the typical level of involvement in the FBA process would increase. This belief was predicated on research which suggests that students from impoverished neighborhoods are more likely to require behavioral support through the use of an FBA due to increased access to weapons and drugs than those from higher-income neighborhoods (Barbarin et al., 2006; Forrest, Zychowski, Stuhldreher, and Ryan, 2000). Unexpectedly, results revealed a weak but significant negative relationship between these two variables. However, the small correlation coefficient minimizes the clinical significance of these results and it is advised that generalizations made about the relationship between these two variables remain minimal.

Research Question 7

Who is typically responsible for conducting FBAs? When participants were asked to indicate which individuals are typically responsible for aiding in the completion of an FBA, maximum likelihood factor analysis was used to identify the presence of two factors. However, further examination of the data revealed that the job role of "school psychologist" was not present within either factor, despite the fact that 86.8% of

participants indicated that school psychologists are typically responsible for creating an FBA. This suggests that there may have been considerable variability in how participants interpreted this question. For example, the fact that Factor 1 (the typical FBA team) included such individuals as "parent" and "student" suggests that some participants were conceptualizing the creators of FBA to include those individuals at the IEP Team meeting who discuss the student's FBA in a general sense, such as by reviewing the results of data collection. In contrast, other participants may have interpreted the phrase "create an FBA" to refer to the actual conceptualization of the function of the behavior, interpreting the data collected and drawing conclusions. Due to the ambiguity surrounding the interpretation of this question, conclusions drawn from the data analysis of this question cannot be meaningfully drawn.

Research Question 8

For what reasons are FBAs typically conducted? Factor analysis revealed the presence of three factors, or clusters of responses, that participants tended to endorse. The first factor is identified with the term "regular education reasons to conduct FBA" and includes reasons for which students in the regular education program typically require the implementation of an FBA. Four regular education reasons were identified: 1) engages in mildly aggressive behavior, chronic disrespect, or chronic non-compliance, 2) is found with weapons, drugs, or alcohol on school property, 3) engages in physical aggression that has the potential to harm self and others (this applied to both students in the regular education and students in the special education program), and 4) when the student is suspended for more than 10 school days.

The second factor is identified with the term "special education reasons to conduct FBA" and includes reasons for which a student in the special education program typically requires the implementation of an FBA. Specifically, eight reasons were identified: 1) as part of the process of identifying a student with an EBD, 2) as part of the process of identifying a student with an Other Health Disability, 3) engages in mildly aggressive behavior, chronic disrespect, chronic non-compliance, 4) is found with weapons, drugs, or alcohol on property, 5) a student is suspended for more than 10 school days, 6) a student in special education is being considered for placement in a more restrictive environment, 7) a student is transitioning from a regular education setting to an alternative education center, and 8) when a student enrolled in an alternative education center is displaying significant behavioral problems.

The third factor is identified with the term "chronic disruptive behavior reasons" and includes the following two reasons: 1) when a student in the regular education program engages in chronic disruptive behavior, and 2) when a student in the special education program engages in chronic disruptive behavior.

An examination of frequency data indicates that participants reported that the most common reasons for which FBAs are typically conducted are those related to significant behavioral problems exhibited by students in the special education program, and aggressive behaviors that are displayed by students in both the regular education and the special education programs. These findings support research previously conducted (Leone, Mayer, Malmgrem, & Meisel, 2000; Skiba, Peterson, & Williams, 1997).

As indicated by Sugai and Horner (1999), 5% of students are responsible for 40.4% of discipline referrals, suggesting that a small number of students are disrupting

the educational environment of many. Traditionally, this behavior is addressed in a reactive manner, utilizing punitive strategies such as exclusion from the education environment through the use of suspension or expulsion (Crone & Horner, 1999; Gresham, 2004; Lane, Umbreit, & Beebe-Frankenberger, 1999; Yell & Katsiyannis, 2000). In contrast, FBA is a technique designed to develop proactive and positively supportive strategies to cope with problem behavior and teach appropriate behaviors to be used in school and in post-school life (Gresham, 2004). By identifying the most common reasons for which FBA is conducted, overall compliance with the IDEA (2004) can be evaluated. Specifically, these results indicate that FBA is typically conducted for reasons articulated in the IDEA (2004).

Research Question 9

Who is typically responsible for collecting data for FBA? Factor analysis did not result in the identification of a particular cluster of individuals typically responsible for collecting data when an FBA is considered necessary. However, frequency data indicate that 82.9% of participants reported that school psychologists typically collect data, and 79.4% of participants note that special educators play a consistent role in collecting data. The special educator assigned specifically to the student being assessed also appears to play a significant role in data collection, as 54.4% of respondents endorsed this response choice.

Research Question 10

What types of data are typically collected when an FBA is deemed necessary? Factor analysis identified one primary cluster of response choices that was typically endorsed in regards to data collection methods: survey to student, survey to parents,

interview with student, and interview with parent. Data also indicate that nearly 87.8% of respondents report completing a record review. Best practices as defined by the literature indicate that indirect methods of assessment, such as the use of surveys and a review of records, are most helpful during the process of identifying one or two problem behaviors most impacting the student's success (Jolivette et al., 2000). Although data indicate that only 46.7% of students undergoing FBA are typically administered a self-report survey, respondents revealed that 72.8% of teachers and 62.0% of parents are typically administered surveys. These data suggest that indirect methods of assessment play a significant role in the data collection process.

With regard to direct methods of assessment, best practices indicate that the use of observation is crucial in both operationally defining one or two behaviors targeted for intervention and in describing the problem behavior in relation to the relevant setting events, antecedents, and consequences (Sterling-Turner et al., 2001). The present study reveals that 67.9% of participants report conducting two or more observations of a student when collecting data for an FBA. If more than one observation is conducted, 86.1% of respondents note that they are conducted in more than one setting, such as in the classroom and on the playground. This suggests that school psychologists are using observational strategies in a comprehensive manner in an attempt to collect detailed information for the purpose of creating effective FBAs.

Research Question 11a and 11b

How often are BIPs written to correspond with an FBA? Results indicate that 36.6% (n = 105) of respondents report that there are times when a BIP is not written to correspond with the FBA. However, when asked to estimate how often this occurs, only

90 (31.3%) of the participants responded. Of the 90 participants who responded, 55.6% indicate that this occurs between one and 20% of the time, 21.1% reveal that it occurs between 21 and 40% of the time, and 20% indicate that this occurs between 41 and 60% of the time. Less than 7% of participants report that this occurs over 60% of the time. The fact that BIPs are not always written in response to an FBA is problematic, as it reveals that although time and energy have been devoted to determining the maintaining functions of the problem behavior, a BIP has not been implemented to remediate the problem behavior. This introduces the possibility that in some cases, FBA is being completed purely as a procedure to meet legal standards, rather than as a tool to effectively address behavioral concerns.

Conversely, are there occasions during which BIPs are designed and included in the IEP and an FBA has not been conducted? Results indicate that 47.7% (n = 137) of participants responded affirmatively to this question. Of the 137 participants who responded to this question, only 122 (89.0%) offered an estimate as to the percentage of time that BIPs are designed and an FBA has not been conducted. Over 30% of participants indicate that this occurs between one and 20% of the time, 36.5% reveal that it occurs between 21 and 41% of the time, and 22.6% respond that it occurs between 41 and 60% of the time. Less than 18% report that it occurs over 60% of the time. This suggests that a considerable number of school professionals are attempting to address problem behaviors by simply utilizing generic behavior interventions, rather than by designing interventions that address the specific functions of the student's problem behavior.

These findings are significant in that they indicate that in some cases, FBAs are completed in a cursory manner or not at all. This is supported by Drasgow and Yell (2001) and Van Acker et al. (2005), who investigated the legal battles waged between parents and school districts regarding FBA. They surmise that current litigation indicates that schools often fail to conduct the required FBAs or, when they do so, produce an FBA of inferior quality. It stands to reason that if a FBA is not executed in a legally sound manner or using standards outlined in the research, BIPs reflecting the individual needs of each student will not be completed. By not addressing behavioral concerns in an effective manner, a student's right to a Free and Public Education (FAPE) may be severely compromised (Drasgow & Yell, 2001; Katsiyannis & Maag, 1998; Yell & Katsiyannis, 2001). Therefore, school professionals may require additional training regarding the importance of utilizing an FBA and a BIP simultaneously.

Research Question 12

What is the typical content of an FBA? Factor analysis revealed that one cluster of responses was most consistently endorsed: academic strengths, behavioral strengths, student interests, setting events, frequency of problem behavior, severity of problem behavior, duration of problem behavior, replacement behavior, antecedents, maintaining functions, consequences, and hypotheses summary statement. This cluster suggests that school psychologists consistently incorporate the components most recommended by generally accepted standards of FBA as defined by the literature (Sterling-Turner et al., 2001; Watson & Steege, 2003). Frequency data suggests that the vast majority of respondents (over 70%) checked nearly all of the response choices. Those response choices that were not consistently endorsed included: describing four or more problem

behaviors that most impact the student's success in school (7.0% of the participants endorsed this response), academic strengths of the student (63.1% of the participants endorsed this response), student interests (53.3% of the participants endorsed this response), a description as to how the hypothesized function of the problem behavior was tested/confirmed (25.4% of the participants endorsed this response), and a description of how data were collected (55.1% of the participants endorsed this response).

Limitations

There are a number of study variables that may limit the generalizability and the interpretation of the results of this investigation. The primary limitation consists of the fact that the survey is constructed from questions designed to note school psychologists' overall perceptions of their current practices in FBA. The results are based on self-reports by the respondents, rather than on verifiable sources of data. School psychologists may have misunderstood the questions, reported their practice inaccurately, or simply reported in a socially desirable manner. While school psychologists may indeed be conducting FBAs that embody those characteristics recommended in the literature, the quality of the FBAs may be inadequate, resulting in FBAs that are cursory and ineffectual. However, since information was given anonymously with no fear of retribution, it still provides the best insight currently available on how school psychologists are implementing the FBA policies expressed in IDEA (2004).

By requesting participants to endorse responses from a pre-constructed list of potential answers, data may be lost as the respondents are prevented from using their own vocabulary to describe specific details regarding their experiences with the FBA process.

The generalizability of this study may also be impaired by loss of the information obtained from those individuals who did not respond to the survey. As Rosenthal and Roznow (1991) suggest, there are significant differences between those who respond and those who do not. Specifically, Rosenthal and Roznow note that responders have a higher need for social approval, are more social, and are more altruistic than non-responders. In addition, it's possible that those school psychologists who have an extremely limited knowledge base or an extremely limited role in the FBA process may be less invested in responding to the survey, resulting in the loss of essential information.

In addition, it should be noted that the participants in this study are all members of NASP. It cannot be known whether those psychologists who are members of NASP, which ensures at least a minimal exposure to the current research in school psychology, would respond differently than psychologists who are not members of NASP.

Another limitation of this study consisted of the wording of the questions. Specifically, while the terms "Functional Behavioral Assessment" and Behavioral Intervention Plan" were operationally defined on page two of the survey, there are several other descriptive words that may have been conceptually vague. For example, survey questions 11 and 12 asked respondents to note the "emphasis" which their graduate programs placed on FBA, and supplied the following response choices, "little emphasis", "moderate emphasis", and "extensive emphasis". However, these response choices were not operationally defined, and therefore, could have been interpreted in a variety of ways. In addition, survey question 18 asked respondents to report which school professionals are typically involving in "creating" an FBA. As suggested by data analysis, participants may have interpreted the term "creating an FBA" in a variety of ways, resulting in

uninterpretable data. Finally, survey questions 18 and 22 asked respondents to report which school professionals are typically involved in creating an FBA and collecting data for an FBA, respectively. However, the job responsibilities of the individuals with these job titles (example: behavioral specialist) may differ drastically depending on the school district.

A final limitation of this study consisted of the negligible results of the test-retest reliability. One hypothesis for these results is that respondents were faced with numerous response choices for each question, with the direction to "check all that apply". In addition, because the second copy of the survey was mailed approximately 60 days after the original copy, it is possible that the respondents felt burdened by the demands of reviewing and considering each response choice, and completed the task with minimal attention and thought. In addition, on several questions respondents were asked to "estimate". It stands to reason that over a 60 day period, these estimates may have changed. Therefore, even if in a general sense participants responded similarly between the first administration of the survey and the second, the fact that there are some differences is going to reflect poorly on the results of the reliability analysis.

Implications for the Practice of School Psychology

The primary implication for the practice of school psychology resulting from this investigation focuses on the need for comprehensive training for both school psychologists and the other educational professionals who typically serve as members of an FBA team. These members, as suggested by this study, consist of special educators, regular educators, school counselors, principals, and parents. While school psychologists are in a prime position to facilitate the design and delivery of comprehensive behavior

intervention plans based on information gleaned from an FBA (Knoster & McCurdy, 2002), only 69.9% of psychologists indicate that they are a member of an educational team whose purpose is to conduct FBA in a collaborative process, as recommended as best practices in the literature (Myers & Holland, 2000). Even taking into account the additional 16.0% of school psychologists who report that they conduct FBA independently, without significant input from other school professionals or caregivers, there continues to be an 8.2% gap between those school psychologists who perceive themselves to be "very familiar" with the term FBA (85.9%) and those school psychologists who report that they are actively involved in the process (94.1%).

Presently, 61.7% of psychologists who graduated from a masters/specialist program and 57.4% of graduates from a doctoral program feel that there was "little emphasis" placed on FBA in their graduate program. However, results suggest that master's level programs may be increasing their emphasis on FBA as those who graduated within the last eight years appear to feel their masters program placed a significantly higher emphasis on FBA than those who graduated more than eight years ago. This trend needs to be encouraged in order to further prepare school psychologists for taking a leadership role the FBA process.

Post-graduate school, respondents indicated that the most common sources of training in FBA comes from three primary sources: in-service training provided by his/her school system, independent reading, and information gleaned from state and/or national conferences provided by professional organizations. In addition, nearly half of all respondents have received 10 or fewer hours in post-graduate training in FBA. In order ensure that school psychologists obtain and maintain training that is compatible

with those practices endorsed by the literature, high quality training should be provided for all school psychologists on a regular basis, with particular attention paid to psychologists who graduated from their school psychology program prior the passage of the IDEA (1997) and/or the IDEA (2004).

While it is necessary to provide general training regarding the principles and methodology espoused by FBA, particular emphasis should be placed on the benefits of using FBA with students in the regular education program as opposed to only those students in the special education program. Although the IDEA (2004) is specifically written to address the need to protect FAPE in students with disabilities, researcher interpretation of the spirit of IDEA (2004) best practices indicates that FBA should be considered for any student displaying the potential for severely disruptive behavior, regardless of their placement in the special education program, their likelihood of undergoing a change in educational setting, or their likelihood of bringing a weapon or drugs to school (Knoster & McCurdy, 2002; Martin & Pear, 1999). Furthermore, members of the educational team should understand the symbiotic relationship between the FBA and the BIP, as failing to apply the information gleaned from an FBA to specific interventions renders the FBA virtually pointless.

Recommendations for Future Research

As the results indicated, nearly 86% of school psychologists are compliant with the legal mandates vaguely described in the IDEA. However, less than 70% of psychologists indicate that they are conducting FBAs in a manner endorsed by the research on best practices in FBA, which states that FBAs should be conducted through collaboration with a team of school professionals in order to maximize effectiveness

(Myers & Holland, 2000). In addition, as Drasgow and Yell (2001) found, substandard FBAs are less likely to uphold their value in legal proceedings.

While demographic variables such as sex of the psychologist, years of experience, grade levels of students served, and socioeconomic status of students served were examined to see if they impacted school psychologists' involvement in the FBA process, no generalizations could be drawn from the data. Future research should investigate other potential reasons which may hamper school psychologist's collaborative involvement in the FBA process. Factors that should be examined may consist of administrators' attitudes about the role of school psychologists, time allotment available for engaging in preventative strategies, school psychologists' perceptions of their preparedness to adopt an active role in the FBA process, and school psychologists' desire to expand their role into the FBA process.

One of the primary limitations of this investigation consists of the fact that the data supplied by the participants was not confirmed through the use of objective methods of data collection. A more effective way of truly assessing current practices in FBA may be to ask a stratified sample of school psychologists to provide a copy of a "typical" FBA and corresponding BIP conducted at the school in which they work. This would allow the researcher to examine the overall quality of the FBA and BIP. An accompanying questionnaire could gather details regarding specifics of the student being assessed, details regarding data collection, and the role of each of the school professionals involved in the assessment and intervention process. Furthermore, data regarding the time, effort, and expectations of the implementers should be collected in an attempt to further investigate barriers to the use of FBA in the school setting.

In addition to investigating the quality of FBAs and BIPs currently created in schools, research needs to concentrate on gathering more concrete data on the overall number of FBAs being conducted, as well as their recipients. More specifically, data should be obtained on the nature of the disabilities demonstrated by the students in question, as well as their status in the regular education vs. special education programs. For example, current research describes an increase in the prevalence of Autism Spectrum Disorder, which may, in turn, suggest an increase in the use of FBAs for very young children (Safran, 2008).

A more complete investigation of current practices in FBA may have a profound effect on the training offered to school psychologists and other educational professionals. LaRocque (2002) states that her research implies that in-service training should focus on knowledge and application instead of philosophical tenets. However, research is needed to gather evidence regarding the most effective models of training, as well as to determine the specific areas in which school professionals are lacking knowledge. Specific areas of training may include: understanding the legal mandates of the IDEA (2004), specific methods of data collection, particularly direct methods of data collection, and instruction on how to translate the data collected into practical, research-based interventions that can be realistically implemented in the classroom. In addition, the merits of establishing minimal criteria for FBA in the new authorization if the IDEA should be discussed, as it may greatly enhance the uniformity of training in FBA across school districts.

Summary

This chapter provided a discussion of the results presented in Chapter IV. Emphasis was placed on discussing the findings in relation to each research question. Results indicate that over 94% of school psychologists perceive themselves to be "very familiar" with the FBA process. Although nearly 86.0% of school psychologists are involved in conducting FBA in a manner that complies with the vague standards set forth by the IDEA, less than 70% of school psychologists are involved in a collaborative manner, as is recommended by accepted standards as defined by the literature (Myers & Holland, 2000). In addition, there appears to be considerable variability in "typical" FBA practices, particularly with regards data collection methods, reasons for which FBA is conducted, and content included in FBA.

Several limitations of the study were described. Specifically, the results are based on self-reports by the respondents, rather than on verifiable sources of data. In addition, respondents were required to endorse responses from a pre-constructed list of potential answers, some of which may have been interpreted as vague. Finally, it should be noted that the results of the test-retest reliability analysis varied considerably from question to question.

Implications for the practice of school psychology focused on discussing the need for the comprehensive training of educational professionals in FBA. Specifically, the emphasis on FBA in both graduate programs in school psychology and in professional settings should be enhanced, with particular attention paid to psychologists who graduated from their school psychology programs prior the passage of the IDEA (1997) and/or the IDEA (2004). The best practices recommendation to use FBA as a pre-referral

strategy with students in the regular education program as opposed to only those students in the special education program was presented. Finally, the need for members of the educational team to understand the symbiotic relationship between the FBA and the BIP in an attempt to improve the design of effective interventions was discussed.

The final portion of the chapter discussed recommendation for future research. Topics which may warrant further exploration include: the investigation of potential reasons for school psychologists' limited involvement in the FBA process; an examination of current practices in FBA through the use of more objective data, such as by collecting and examining actual FBAs and BIPs conducted by school psychologists at their current place of work; and an examination of the time, effort, and expectations of the implementers in an attempt to further investigate barriers to the use of FBA in the school setting. Finally, the need to explore the most effective models of training, as well as to determine the specific areas in which school professionals are lacking knowledge was noted.

References

Asmus, J. M., Vollmer, T. R., & Borrero, J. C. (2002). Functional behavioral assessment: A school based model. *Education and Treatment of Children, 25* (1), 67-90.

Baer, D. M., Wolf, M. M., & Risley, T. R. (1968). Some current dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis, 1*, 91-97.

Barbarin, O., Bryant, D., McCandies, T., Burchinal, M., Early, D., & Clifford, R., et al. (2006). Children enrolled in public pre-K: The relation of family life, neighborhood quality, and socioeconomic sources to early competence. *Journal of Orthopsychiatry, 76* (2), 265-276.

Bergstrom, M. K. (2003). The efficacy of school-based teams conducting functional behavioral assessment in the general education environment. *Dissertation Abstracts International Section A: Humanities and Social Sciences, 64,* (6-A), 1968.

Carr, E. G. (1977). The motivation of self-injurious behavior: A review of some hypotheses. *Psychological Bulletin, 84*, 800-816.

Carr, E. G. (1993). Behavior analysis is not ultimately about behavior. *The Behavior Analyst, 16*, 47-49.

Carr. E. G., & Durand, V. M. (1985). Reducing behavior problems through functional communication training. *Journal of Applied Behavior Analysis, 18* (2), 111-126.

Carr, E. G., & Newsome, C. (1985). Demand-related tantrums. *Behavior Modification, 9*, 403-426.

Carr, E. G., Newsome, C. D., & Binkoff, J. A. (1980). Escape as a factor in the

aggressive behavior of two retarded children. *Journal of Applied Behavior Analysis, 13*, 101-117.

Chandler, L. K., Dahlquist, C. M., Repp, A. C., & Feltz, C. (1999). The effects of team-based functional assessment on behavior of students in classroom settings. *Exceptional Children, 66*, 101-122.

Colvin, G., Sugai, G., & Kameenui, E. (1993). Reconceptualizing behavior management and school-wide discipline in general education. *Education and Treatment of Children, 16*, 361-381.

Conroy, M. A., Dunlap, G., Clarke, S., Alter, P. J. (2005). A descriptive analysis of positive behavioral intervention research with young children with challenging behavior. *Topics in Early Childhood Special Education, 25* (3), 156-166.

Conroy, M. A., Katsiyannis, A., Clark, D., Gable, R. A., & Fox, J. J. (2002). State office of education practices implementing the IDEA disciplinary provisions. *Behavioral Disorders, 27* (2), 98-108.

Conroy, M. A., & Stichter, J. P. (2003). The application of antecedents in the functional assessment process. *Journal of Special Education, 37* (1), 15-25.

Crone, D. A., & Horner, R. H. (1999). Contextual, conceptual, and empirical foundations of functional behavioral assessment in schools. *Exceptionality, 8* (3), 161-172.

Curtis, M. J., Lopez, A. D., Castillo, J. M., Batsche, G. M., Minch, D., and Smith, J. C. (2008). The status of school psychology: Demographic characteristics, employment conditions, professional practices, and continuing professional development. *Communiqué, 36* (15), 1-6.

Davis, C. A. (1998). Functional assessment: Issues in implementation and applied

research. *Preventing School Failure, 43* (1), 34-36.

Deno, S. L. (1992). The nature and development of curriculum-measurement. *Preventing School Failure, 36,* 5-11.

Dieterich, C. A., & Villani, C. J. (2000). Functional behavioral assessment: Beyond student behavior. *Brigham Young Education & Law Journal, 2,* 209-219.

Drasgow, E., & Yell, M. L. (2001). Functional behavioral assessment: Legal requirements and challenges. *School Psychology Review, 30* (2), 239-151.

Dunlap, G., Kern, L., dePerczel, M., Clarke, S., Wilson, D., Childs, K. E., (1993). Functional analysis of classroom variables for students with emotional and behavioral disorders. *Behavioral Disorders, 18,* 275-291.

Durant, R. H., Krowchuk, D. P., Kreiter, S., Sinal, S. H., & Woods, C. R. (1999). Weapon carrying on school property among middle school students. *Archives of Pediatrics and Adolescent Medicine, 153,* 21-26.

Ervin, R. A., Ehrhardt, K. E., & Poling, A. (2001). Functional assessment: Old wine in new bottles. *School Psychology Review, 30* (2) 173-179.

Ervin, R. A., Radford, P. M., Bertsch, K., Piper, A. L., Ehrhardt, K. E., & Poling, A. (2001). A descriptive analysis and critique of the empirical literature on school-based functional assessment. *School Psychology Review, 30* (2), 193-210.

Fucilla, R. (2005). Post-crisis intervention for individuals with autism spectrum disorder. *Journal of Strength-Based Interventions, 14* (1), 44-51.

Flugum, K. R., & Reschly, D. J. (1994). Prereferral interventions: Quality indices and outcomes. *Journal of School Psychology, 32* (1), 1-14.

Forrest, K. Y. Z., Zychowski, A. K., Stuhldreher, W. L., & Ryan, W. J. (2000). Weapon-

carrying in school: Prevalence and association with other violent behaviors. *American Journal of Health Studies, 16,* 133-140.

Fuchs, D., & Fuchs, L. S. (1990). Making educational research more important. *Exceptional Children, 57,* 102-107.

Gable, R. A., Butler, C. J., Walker-Bolton, I., Tonelson, S. W., Quinn, M. M., & Fox, J. J. (2003). Safe and effective schooling for all students: Putting into practice the disciplinary provisions of the 1997 IDEA. *Preventing School Failure, 47* (2), 74-78.

Gable, R. A., & Henrickson, J. M. (1999). Changing discipline policies and practices: Finding a place for functional behavioral assessment in schools. *Preventing School Failure, 43* (4), 167-170.

Gable, R. A., Hendrickson, J. M., & Van Acker, R. (2001). Maintaining the integrity of FBA-based interventions in schools. *Education and Treatment of Children, 24* (3), 248-260.

Gable, R. A., Quinn, M. M., Rutherford, R. B., & Howell, K. (1998). Addressing problem behaviors in schools: Use of functional assessments and behavior intervention plans. *Preventing School Failure, 42* (3), 106-119.

Gresham, F. M. (2004). Current status and future directions of school-based behavioral interventions. *School Psychology Review, 33 (3),* 326-343.

Gresham, F. M., & Watson, T. S., & Skinner, C. H. (2001). Functional behavioral assessment: Principles, procedures, and future directions. *School Psychology Review, 30* (2), 156-173.

Gresham, F. M., Quinn, M. M., & Restori, A. (1999). Methodological issues in

functional analysis: Generalizability to other disability groups. *Behavioral Disorders, 24* (2), 180-182.

Horner, R. H. (1994). Functional assessment contributions and future directions. *Journal of Applied Behavior Analysis, 27*, 401-404.

Horner, R. H., & Carr, E. G. (1997). Behavioral support for students with severe disabilities: Functional assessment and comprehensive intervention. *The Journal of Special Education, 31*, 84-104.

Individuals with Disabilities Education Act of 1990 (IDEA), 20 USC 1400 et seq.

Individuals with Disabilities Education Act Amendments of 1997 (IDEA 1997), 20 USC 1400 et seq.

Individual with Disabilities Education Act Amendments of 2004 (IDEA 2004), 20 USC 1400 et seq.

Ingram, K., Lewis-Palmer, T., & Sugai, G. (2005). Function-based intervention planning: Comparing the effectiveness of FBA function-based and non-function-based intervention plans. *Journal of Positive Behavior Interventions, 7* (4), 224-236.

Iwata, B., Dorsey, M., Slifer, K., Bauman, K., & Richman, G. (1982). Toward a functional analysis of self-injury. *Analysis and Intervention in Developmental Disabilities, 2*, 3-20.

Jolivette, K., Barton-Arwood, S., & Scott, T. M. (2000). Functional behavioral assessment as a collaborative process among professionals. *Education & Treatment of Children, 23* (3), 298-313.

Katsiyannis, A., & Maag, J. W. (1998). Disciplining student with disabilities: Issues and

considerations for implementing IDEA '97. *Behavioral Disorders, 23* (4), 276-289.

Knoster, T. P., & McCurdy, B. (2002). Best practices in functional behavioral assessment for designing individualized student programs. In A. Thomas & J. Grimes (Eds.), *Best Practices in School Psychology IV* (pp. 1007-1028). Washington, DC: National Association of School Psychologists.

Lane, K. L., Umbreit, J., & Beebe-Frankenberger, M. E. (1999). Functional assessment research on students with or at-risk for EBD: 1990 to the present. *Journal of Positive Behavior Interventions, 1* (2), 101-111.

Larocque, M. M. (2002). Functional behavioral assessment in Washington state. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 62,* (12-B), 5959.

Leone, P. E., Mayer, M. J., Malmgrem, K., & Meisel, S. M. (2000). School violence and disruption: Rhetoric, reality, and reasonable balance. *Focus on Exceptional Children, 33* (1), 1-20.

Lerman, D. C., & Iwata, B. A. (1996). Developing a technology for the use of operant extinction in clinical setting: An examination of basic and applied research. *Journal of Applied Behavior Analysis, 29,* 345-382.

Lewis, T. J., & Sugai, G. (1996). Functional assessment of problem behavior: A pilot investigation of the comparative and interactive effects of teacher and peer social attention on students in general education setting. *School Psychology Quarterly, 11,* 1-19.

Luiselli, J. K., & Cameron, M. J. (1998). *Antecedent control: Innovative*

approaches to behavioral support. London: Paul H. Brookes Publishing Company.

March, R. E., & Horner, R. H. (2002). Feasibility and contributions of functional behavioral assessment in schools. *Journal of Emotional & Behavioral Disorders, 10* (3), 158-170.

Martin, G., & Pear, J. (1999) *Behavior modification: What it is and how to do it*. New Jersey: Prentice Hall.

Mash, E. J., & Terdal, L. G. (1997). Assessment of child and family disturbance. *Assessment of Childhood Disorders, Third Edition.* New York: The Guilford Press.

McAfee, J. K. (1987). Classroom density and the aggressive behavior of handicapped children. *Education and Treatment of Children, 10,* 134-135.

McComas, J., & Mace, F. C. (2000). Theory and practice in conducting functional behavioral assessment. In E. Shapiro & T. Kratochwill (Eds.), *Behavioral assessment in schools: Theory, research, and clinical foundations* (pp. 78-103). New York: Guilford Press.

Myers, C. L., & Holland, K. L. (2000). Classroom behavioral interventions: Do teachers consider the function of the behavior? *Psychology in the Schools, 37* (3). 271-280.

Nelson, J. R., Roberts, M. L., Rutherford Jr., R. B., Mathur, S. R., & Aaroe, L. A. (1999). A statewide survey of special education administrators and school psychologists regarding functional behavioral assessment. *Education and Treatment of Children, 22* (3), 267-279.

O'Neill, R. E., Horner, R. H., Albin, R. W., Sprague, J. R., Storey, K., & Newton, J. S. (1997). *Functional assessment and program development for problem behavior: A practical handbook (2nd ed.).* Pacific Grove, CA: Brooks/Cole.

Office of Special Education Programs (OSEP) Questions and Answers. *Federal Register*, 1999; 64 (March 12): 12617-12632.

Quinn, M. M. (2000). Functional behavioral assessment: The letter and spirit of the law. *Preventing School Failure, 44* (4), 147-151.

Quinn, M. M., Gable, R. A., Fox, J., Rutherford, R. B., Van Acker, R., & Conroy, M. (2001). Putting quality functional assessment into practice in the schools: A research agenda on behalf of E/BD students. *Education and Treatment of Children, 24* (3), 261-275.

Reid, R., & Nelson, J. R. (2002). The utility, acceptability, and practicality of functional behavioral assessment for students with high-incidence problem behaviors. *Remedial and Special Education, 23,* 15-23.

Repp, A. (1994). Comments on functional analysis procedures for school-based behavior problems. *Journal of Applied Behavior Analysis, 27,* 409-411.

Repp, A. C., & Karsh, K. G. (1994). Hypothesis-based interventions for tantrum behaviors of persons with developmental disabilities in school settings. *Journal of Applied Behavior Analysis, 27,* 21-31.

Rogers, E. L. (2001). Functional behavioral assessment and children with autism: Working as a team. *Focus on Autism and Other Developmental Disabilities, 16* (4), 228-231.

Rosenthal, R., & Rosnow, R. (1991). *Essentials of behavioral research: Methods and*

data analysis. McGraw-Hill: New York.

Rose, T. L. (1988). Current disciplinary practices with handicapped students: Suspensions and Expulsions. *Exceptional Children, 55* (3), 230-239.

Safran, S. P. (2008). Why youngsters with autism spectrum disorder remain underrepresented in special education. *Remedial and Special Education, 29* (2), 90-95.

Scott, T. M., McIntyre, J., Liaupsin, C., Nelson, C. M., Conroy, M., & Payne, L. D. (2005). An examination of the relation between functional behavior assessment and selected intervention strategies with school-based teams. *Journal of Positive Behavior Interventions, 7* (4), 205-215.

Scott, T. M, Meers, D. T., & Nelson, C. M. (2000). Toward a consensus of functional behavioral assessment for students with mild disabilities in public school contexts: A national survey. *Education & Treatment of Children, 23*, 265-285.

Shriver, M. D., Anderson, C. M., & Proctor, B. (2001). Evaluating the validity of functional behavior assessment. *School Psychology Review, 30* (2), 180-192.

Simon, S. (2008, July). What is a kappa coefficient? Retrieved September 12, 2008 from http://www.childrensmercy.org/stats/definitions/kappa.htm

Skiba, R. J., Peterson, R. L., & Williams, T. (1997). Office referrals and suspension: Disciplinary intervention in middle schools. *Education & Treatment of Children, 20* (3), 295-315.

Skinner, B.F. (1953). *Science and human behavior*. New York: Free Press.

Skinner, B.F. (1969). Contingency management in the classroom. *Education, 90* (2), 93-100.

Sterling-Turner, H. E., Robinson, S. L., & Wilczynski, S. M. (2001). Functional assessment of distracting and disruptive behaviors in the school setting. *School Psychology Review, 30* (2), 211-226.

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

Sugai, G., & Horner, R. H. (2002). Introduction to the special series on positive behavior support in schools. *Journal of Emotional & Behavioral Disorders, 10* (3), 130-135.

Sugai, G., Lewis-Palmer, T., & Hagan-Burke, S. (1999-2000). Overview of the functional behavioral assessment process. *Exceptionality, 8,* 149-160.

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics (5th ed.).* USA: Allyn and Bacon.

The Education for All Handicapped Children Act of 1975, P. L. 94-142, USC 1401 et seq. *Federal Register* 1977; 42 (August 23): 42473-42518.

Umbreit, J. (1995). Functional assessment and intervention in a regular classroom setting for the disruptive behavior of a student with Attention Deficit Hyperactivity Disorder. *Behavioral Disorders, 20,* 267-278.

Van Acker, R., Boreson, L., Gable, R.A., & Potterton, T. (2005). Are we on the right course? Lessons learned about current FBA/BIP practices in schools. *Journal of Behavioral Education, 14* (1) 35-56.

Vollmer, T. R., & Iwata, B. A. (1992). Differential reinforcement as treatment for behavioral disorders: Procedural and functional variations. *Research in Developmental Disabilities, 13,* 393-417.

Vollmer, T. R., Iwata, B. A., & Zarcone, J. R. (1993). The role of attention in the treatment of attention-maintained self-injurious behavior: Noncontingent reinforcement and differential reinforcement of other behavior. *Journal of Applied Behavior Analysis, 26* (1), 9-21.

Walker, H. M., Ramsay, E., & Gresham, F. M. (2004). *Antisocial behavior in school: Evidence-based practices* (2nd ed.). Belmont, CA: Wadsworth/Thomson Learning.

Watson, T. S., Ray, K. P., Sterling-Turner, H., & Logan, P. (1999). Teacher-implemented functional analysis and treatment: A method for linking assessment to intervention. *School Psychology Review, 28* (2), 292-302.

Watson, T. S., & Steege, M. W. (2003). *Conducting school-based functional behavioral assessments.* New York: Guilford.

Witt, J. C., Daly, E., & Noell, G. H. (2000). *Functional assessments: A step-by-step guide to solving academic and behavior problems.* Longmont, CO: Sopris West.

Witt, J. C., VanDerHeyden, A. M., & Gilbertson, D. (2004). Troubleshooting behavioral interventions: A systematic process for finding and eliminating problems. *School Psychology Review, 33* (3), 363-383.

Yell, M. L., & Drasgow, E. (2000). Litigating a free appropriate public education: The Lovaas hearings and cases. *Journal of Special Education, 33*, 206-215.

Yell, M. L., & Katsiyannis, A. (2000). Functional behavioral assessment and IDEA '97: Legal and practice considerations. *Preventing School Failure, 44* (4), 158-162.

Yell, M. L., & Katsiyannis, A. (2001). Promises and challenges in education law: 25 years of legal developments. *Preventing School Failure, 45* (2), 82-88.

Yell, M. L., & Rozalski, M. E. (2000). Searching for safe schools: Legal issues in the prevention of school violence. *Journal of Emotional & Behavioral Disorders, 8* (3), 187-197.

APPENDIX A

Informed Consent Form

Informed Consent Form

September 5, 2006

Dear School Psychologist:

You are invited to participate in a survey regarding Functional Behavioral Assessment (FBA). As a school psychologist, I am interested in investigating:

1. school psychologists' familiarity with the concept of FBA
2. the amount/type of training received by school psychologists in the FBA process
3. the individuals typically held responsible for conducting FBAs
4. when and for whom FBAs are typically conducted
5. methods of data collection
6. school psychologists' typical involvement in the FBA process

By giving you the opportunity to report your experiences on this topic, I hope to gain a better understanding of what contributes to effective behavioral planning.

Indiana University of Pennsylvania supports the practice of protection of human subjects participating in research. This project has been approved by the Indiana University of Pennsylvania Institutional Review Board for the Protection of Human Subjects (Phone: (724) 357-7730). There are no known risks or discomforts associated with this research. Please be aware that even if you agree to participate in this survey study, you are free to withdraw at any time and you may do so without penalty. Although your participation is solicited, it is strictly voluntary. **The enclosed survey should take approximately 10-15 minutes to complete.** The survey has an identification number for mailing purposes only. This number is used to simply verify returned surveys and to assist with follow-up on unreturned surveys. Your name will never be placed in a survey and your name will not in any way be associated with any of the findings. All information obtained will be kept confidential and incorporated into group data. **Please complete and return the survey in the enclosed, stamped envelope within two (2) weeks, by September 19, 2006.** Your return of a completed survey implies consent.

It is important to have input from as many school psychologists as possible, so I would appreciate you taking the time to complete the survey. If you have any questions or require additional information, please feel free to contact either of us as listed below. If you choose not to participate, please return the incomplete survey in the enclosed envelope. We appreciate your time and cooperation and look forward to receiving your completed survey.

Sincerely,

Tara E. Nusz, Doctoral Candidate
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APPENDIX B

Copy of Survey Instrument

CURRENT PRACTICES IN FUNCTIONAL BEHAVIORAL ASSESSMENT (FBA):

A NATIONAL SURVEY OF SCHOOL PSYCHOLOGISTS

PART I This section asks about your demographic information.

1. Are you currently employed as a school psychologist?

____ Yes, I am employed as a part-time or full-time school psychologist in the public or private school system.
If you are employed part-time as a school psychologist, how many hours per week? _____

____ No, I am not employed as a school psychologist in the public/private school system.
I do not work as a school psychologist or I work in one of the following settings:
administrative setting only, hospital setting, mental health center, university position, etc.

NOTE: If you are not employed as a school psychologist in the public or private school system, please discontinue completing this survey and mail back the incomplete survey.

2. Please check one.

____ Male
____ Female

3. What is your highest degree earned? (Please check one.)

____ Master's Degree
____ Specialist Degree
____ Ph.D.
____ Ed.D. / D.Ed.
____ Psy.D.

4. State in which you are employed: _____

5. How many years have you worked as a school psychologist? _____

6. With which grade levels do you work? (List all that apply.) _____

7. What special populations do you serve? (Check all that apply.)

____ Mental Retardation
____ Learning Disabilities
____ Emotional/Behavioral Disabilities
____ Other Health Impairments (including ADHD)
____ Autism Spectrum Disorder
_____ Visually Impaired
_____ Hearing Impaired
_____ Speech/Language Impaired
_____ Physical Impairments

8. What is the ratio of school psychologist to student population? _____

9. Approximately what percentage of the students you serve would you consider to be:

____ Poor
____ Lower Middle-Class
____ Middle Class
____ Upper Middle Class
____ Upper Class

<u>PART II</u> This section asks about your familiarity with the concept of "functional behavioral assessment". For the purposes of this study, the following definitions of "Functional Behavioral Assessment (FBA)" and "Behavioral Intervention Plan (BIP)" will be used:

<u>Functional Behavioral Assessment (FBA)</u> = collection of methods for gathering information about antecedents, behaviors, and consequences in order to determine the reasons of behavior. This information is used to design interventions to reduce problem behaviors and to facilitate positive behaviors.

<u>Behavioral Intervention Plan (BIP)</u> = a proactive and preventative intervention plan developed in order to reduce the occurrence of the inappropriate behavior and replace the target behavior with more appropriate academic and social behaviors.

10. How familiar are you with the term "Functional Behavioral Assessment (FBA)"?

____ I am not familiar with this term at all.

____ I have heard of this term, but could not offer an educated definition.

____ I could define this term, but could not describe when and why a functional behavioral assessment should be implemented.

____ I am very familiar with functional behavioral assessments, as they are frequently discussed and/or implemented at my place of work.

<u>PART III</u> This section asks about your training in functional behavioral assessment (FBA).

11. To what extent did your master's/specialist program emphasize FBA?

____ not applicable

____ little emphasis

____ moderate emphasis

____ extensive emphasis

12. To what extent did your doctoral program emphasize FBA?

____ not applicable; I did not earn a doctoral degree

____ little emphasis

____ moderate emphasis

____ extensive emphasis

13. From which sources have you received post-graduate training in FBA? (Check all that apply.)

_____ I have not received any post-graduate training in the FBA process.
_____ Graduate study coursework supplemental to certification program (coursework after earning a terminal degree in school psychology)
_____ In-service training provided by my school system.
_____ Research from the internet.
_____ Independent reading
_____ Role-modeling/informal instruction or guidance from colleagues.
_____ Professional presentation sponsored by school district
_____ Professional presentation sponsored by county or state organization (County, Intermediate Unit or Area Education Agency)
_____ State or national conference provided by professional organization (NASP, state school psychology association)
_____ Other: _____

14. Approximately how many hours of post-graduate training have you received in FBA? _____

PART IV: This section asks about your typical level of involvement in the FBA process.

15. What is your typical level of involvement in the FBA process? (Check one.)

____ I never have the responsibility of conducting an FBA.
____ Although I am familiar with aiding in the design of BIPs (Behavioral Intervention Plans), I am never involved in conducting an FBA.
____ I give all my documentation of a student's misbehaviors to a colleague, and he/she/they conduct/write the FBA.
____ Writing an FBA is a collaborative process, and I am one member of the team.
____ I independently conduct/write FBAs.

16. Of the total number of FBAs that are conducted in the school(s) in which you serve, with what percentage are you typically involved? _____

17. With approximately how many FBAs have you personally been involved in the past 12 months? _____

PART V This section asks about the individuals typically responsible for creating FBAs, the conditions under which FBAs are written, and data collection.

18. The following individuals are typically responsible for creating an FBA: (Check all that apply.)

_____ Behavioral Specialist
_____ School Psychologist
_____ Special Educator
_____ Coordinator of Special Education Program
_____ The student's regular education teacher(s)
____ Superintendent/Assistant Superintendent
____ School Nurse
____ Primary Care Physician
____ Psychiatrist
____ Parent(s)

_____ School Principal ____ School Counselor

_____ Wrap-Around service professional ____ Student

_____ The student's special education teacher(s) ____ Day-care provider

_____ Professionals from outside agencies (social worker, therapist, county case manager) _____

_____ Other service providers (speech clinician, occupational therapist, etc.) _____

19. When are FBAs typically conducted? (Check all that apply.)

_____ When a student is initially evaluated and placed in the special education program, regardless of the student's disability classification.

_____ As part of the process of identifying a student with an Emotional or Behavioral Disability

_____ As part of the process of identifying a student with an Other Health Disability (including Attention Deficit/Hyperactivity Disorder)

_____ Other: _____

20. When are FBAs typically conducted? (Check all that apply.)

a. When a student in the regular education program (including students placed in the alternate education center):

_____ Engages in chronic disruptive behavior (leaving seat without permission, talking out of turn, off-task behavior)

_____ Engages in mildly aggressive behavior, chronic disrespect, or chronic non-compliance

_____ Is found with weapons, drugs, or alcohol on school property

_____ Engages in physical aggression that has the potential to harm him/herself or others

_____ Other: _____

b. When a student in the special education program:

_____ Engages in chronic disruptive behavior (leaving seat without permission, talking out of turn, off-task behavior)

_____ Engages in mildly aggressive behavior, chronic disrespect, chronic non-compliance

_____ Is found with weapons, drugs, or alcohol on school property

_____ Engages in physical aggression that has the potential to harm him/herself or others

_____ Other: _____

21. When are FBAs typically conducted? (Check all that apply.)

_____ When a student in the regular education program is suspended for more than 10 school days

_____ When a student in the special education program is suspended for more than 10 school days

_____ When a student in the special education program is being considered for placement in a more restrictive environment (i.e., transition from a inclusion setting to a self-contained classroom)

_____ When a student is transitioning from a regular education environment to an alternative education center

_____ When a student enrolled in a alternative education center is displaying significant behavioral problems

_____ Other: _____

22. When an FBA is conducted, who typically collects data on the student's behavior?
(Check all that apply.)

_____ Behavioral Specialist
_____ School Psychologist
_____ Special Educator
_____ Coordinator of Special Education Program
_____ Student's Regular Education Teachers
_____ School Principal
_____ Wrap-Around service professional
_____ Superintendent/Assistant Superintendent
_____ School Nurse
_____ Primary Care Physician
_____ Psychiatrist
_____ Parent(s)
_____ School Counselor
_____ Student
_____ Professionals from outside agencies (social worker, therapist)
_____ Daycare Provider
_____ Other service providers (speech clinician, occupational therapist, etc.) _____

23. What methods are typically used to collect data on the student's behavior?
(Check all that apply.)

Indirect Measures of Assessment:

____ record review
____ surveys/rating scales given to student
____ surveys/rating scales given to teachers
____ surveys/rating scales given to parents
____ interview with student
____ interview with 1 teacher
____ interview with 2 or more teachers
____ interview with parent(s)
____ other: _____

Direct Measures of Assessment

___ completing 1 observation of the student
___ completing 2 observations of the student
___ completing 3 observations of the student
___ completing 4 or more observations of the student
___ other: _____

24. If the student is observed on more than one occasion, are the observations:

Conducted in more than one setting (such as in a classroom and on the playground)?

____ No
____ Yes

Conducted by more than one observer (such as by two different teachers, or by the school psychologist and a teacher)?

____ No
____ Yes

25. Are there occasions during which an FBA is written and a corresponding Behavioral Intervention Plan (BIP) is not?

____ No

____ Yes

_____ If yes, approximately what percentage of the time?

26. Are there occasions during which a BIP is created and included in the IEP and an FBA has not been conducted?

____ No

____ Yes

_____ If yes, approximately what percentage of time?

27. Over what period of time are data collected (from the time of the referral to conduct an FBA until the time that a BIP is created)? (Please answer in days or weeks.) _____

<u>PART VI</u> This section asks about your perceptions regarding the typical content of an FBA and your involvement in the FBA process.

28. In your experience, what information is <u>typically</u> included in a Functional Behavioral Assessment (FBA)?

____ All problem behaviors, even if they are numerous
____ 3 or less problem behaviors that most impact the student's success in school
____ 4 or more problem behaviors that most impact the student's success in school
____ Academic strengths of student
____ Behavioral strengths of student
____ Student interests
____ Setting events/events that make the problem behavior more likely to occur (such as the time of day, the location, the class activity, or the physical conditions of the environment)
____ Description of frequency of the problem behavior
____ Description of severity of the problem behavior
____ Description of duration of the problem behavior
____ Description of desired or replacement behavior
____ Antecedents (activities that typically precede or trigger problem behavior)
____ Maintaining functions of problem behavior (hypotheses as to why the student is engaging in the problem behavior)
____ Consequences/events that occur as a result of problem behavior
____ Hypotheses summary statement (a descriptive statement summarizing the problem behavior, when it occurs, and what the perceived function is)
____ A description as to how the hypothesized function of the problem behavior was tested/confirmed
____ Description of how data was collected
____ Other: _____

APPENDIX C

Follow-Up Letter (14 Day)

Follow-Up Letter (14 Day)

September 20, 2006

Dear School Psychologist,

Approximately two weeks ago you should have received a survey seeking your input on the role of school psychologists in Functional Behavioral Assessment (FBA). The survey was sent to a large sample of school psychologists who are members of the National Association of School Psychologists.

If you have already completed and returned the survey, thank you for your participation. If not, please do so today, as your input is critical. Although your participation is solicited, it is strictly voluntary.

If you have any questions regarding this survey, please call me at (315) 378-5620 or email me at gdsk@iup.edu.

Sincerely,

Tara E. Nusz, Doctoral Candidate
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APPENDIX D

Second Follow-Up Mailing (30 Day)

Second Follow-Up Mailing (30 Day)

October 3, 2006

Dear School Psychologist,

Approximately four weeks ago, you should have received a survey seeking your perceptions on the role of school psychologists in Functional Behavioral Assessment (FBA). As o

f today, I have not received your completed survey. I would very much appreciate your feedback in the results. If you have already completed and returned the survey, thank you for your participation.

The purpose of the study is to investigate:

1. school psychologists' familiarity with the concept of FBA
2. the amount/type of training received by school psychologists in the FBA process
3. the individuals typically held responsible for conducting FBAs
4. when and for whom FBAs are typically conducted
5. methods of data collection
6. school psychologists' typical involvement in the FBA process

Your input is critical. Although your participation is solicited, it is strictly voluntary. Please consider returning the survey as soon as possible. The survey should take approximately 10-15 minutes to complete.

Please contact me at (315) 378-5620 or at **gdsk@iup.edu** if you any questions or concerns regarding your participation in this research project.

Thank you for your help!

Sincerely,

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APPENDIX E

Reliability Sample

RELIABILITY SAMPLE

November 8, 2006

Dear School Psychologist,

Within the last two months you should have received at least one copy of a survey entitled**, "**Current Practices in Functional Behavioral Assessment (FBA): A National Survey of School Psychologists". **According to my records, you completed this survey, for which I sincerely thank you.**

I am asking for your assistance once again. **You have been randomly chosen as one of 30 respondents to participate in a reliability sample.** I would like to urge you to take the time to complete the survey once more.

Once again, I'd like to remind you that the purpose of the study is to investigate:

1. school psychologists' familiarity with the concept of FBA
2. the amount/type of training received by school psychologists in the FBA process
3. the individuals typically held responsible for conducting FBAs
4. when and for whom FBAs are typically conducted
5. methods of data collection
6. school psychologists' typical involvement in the FBA process

Your input is critical. Although your participation is solicited, it is strictly voluntary. Please consider returning the survey as soon as possible. The survey should take approximately 10-15 minutes to complete.

Please contact me at (315) 378-5620 or at **gdsk@iup.edu** if you any questions or concerns regarding your participation in this research project.

Thank you for your help!

Sincerely,

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