Assessing the Use of Function Based Assessments in Massachusetts Among Professionals Working with Individuals with Developmental Disabilities

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by

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Abstract

There has been an emphasis placed on conducting function-based assessments (FBA) prior to selecting treatment for challenging behaviors for individuals with developmental disabilities (IDD). Research has demonstrated that treatment that first identifies the function of behavior is more effective for reducing challenging behavior than treatment not based on FBAs. There is little information regarding whether the practitioners responsible for behavior modification are employing FBA in applied settings. The purpose of the current study was to distribute a survey to assess the degree to which FBA are implemented in agencies serving IDD in the state of Massachusetts. The survey asked practitioners to indicate their perception about and use of the various categories of functional assessment (e.g., indirect assessment [IA], descriptive analysis, and functional analysis [FA]). From the 275 responses, the most frequently used FBA was descriptive assessments, which involves direct observation of behavior but no manipulation of environmental events. Results suggest that even though the majority (68.2%) of practitioners believe FA to be the more informative assessment tool for selecting behavioral treatment, only 26.1% of respondents indicate that they typically use FA (alone or in combination with IA or DA) to inform the development of a behavior plan. Board certified behavior analysts (BCBA) were no more likely to use FAs than were individuals without BCBA-certification. In fact, contrary to published research questioning the validity of DA for identifying function, 52.8% of BCBAs believe that descriptive assessments alone are sufficient for determining behavior function. Barriers to conducting FAs are discussed.

Keywords: Function-based assessment, functional assessment, survey, current practices
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Severe problem behavior (SPB) such as self-injury (e.g., head hitting, hand biting, eye poking), aggression, tantrums, and vocal and motor stereotypy (e.g., repeating specific phases and/or non-word syllables, or body rocking back and forth repetitively) often accompany a diagnosis of autism as well as with other developmental disability diagnosis. While this severe problem behavior may be typical, the diagnosis of individuals with developmental disabilities (IDD) does not require an individual to exhibit any form of SPB. For several forms of SPB, behavioral intervention may be necessary to prevent, decrease, or limit the risk an individual poses to themselves or others. Variables such as environmental events that occur prior to and following SPB can be manipulated in an attempt to address SPB of IDD without considering why the behavior is occurring—the behavioral function. In fact, behavior modification has successfully decreased rates of SPB by using treatment interventions such as differential reinforcement of other (DRO) or of alternative (DRA) behavior schedules and punishment procedures (Hall, Axelrod, Tyler, Grief, Jones, & Robertson, 1972; Risley, 1968). But applied behavior analysis (ABA) emphasizes an understanding of behavior function as a fundamental prerequisite to the development of effective treatment.

Identifying the function of problem behavior is important because first determining the “if-then” relation between the behavior and the environment, practitioners can alter that relation to diminish subsequent occurrences of the behavior as well as teach socially acceptable alternative behavior all without needing to rely on punishment procedures (Axelrod, 1987; Pelios, Morren, Tesch, & Axelrod, 1999). For
instance, when behavior is identified as being sensitive to reinforcement, the specific positive or negative reinforcer can be withheld or removed contingent on the occurrence of the challenging or disruptive behavior (i.e., extinction and escape extinction) and used in a treatment program to develop more appropriate, replacement behaviors (i.e., differential reinforcement of other or incompatible behaviors procedures; Repp & Karsh, 1994).

Functional behavior assessment includes three categories of assessment, indirect assessments, descriptive assessments, and functional analysis (Lennox & Miltenberger, 1989). Indirect functional assessment procedures include interviews or questionnaires. Examples of indirect methods reported in the literature include The Functional Assessment Interview (O’Neill et al., 1997), the Behavioral Diagnosis and Treatment Information Form (Bailey & Plyes, 1989), and the Stimulus Control Checklist (Rolider & Van Houten, 1993). An advantage of this assessment is that it can be implemented quickly to identify important participant characteristics, their medical history and daily routines, and the topographies of their problem behavior. Although indirect assessments are useful for obtaining information about the participant that may help guide further assessment, faulty recollection, observer bias, and the subjective interpretation of events limit the validity and reliability of indirect assessments for identifying behavioral function (Kazdin, 1980; Newton & Strumey, 1991; Paclawskyj, Matson, Rush, Smalls, & Vollmer, 2001; Zarcone, Rodgers, Iwata, Rourke, & Dorsey, 1991). However, despite poor reliability, open-ended indirect methods can provide a clinician with qualitatively rich information regarding idiosyncratic conditions under which SPB is maintained.
These individual-specific variables can influence the further, more rigorous analysis of the relation between the behavior and some idiosyncratic event.

Descriptive assessments allow researchers to determine which naturalistic conditions are most likely to occur before and after a target behavior. Examples of descriptive assessments include antecedent-behavior-consequence (ABC) continuous recording, ABC narrative recording, and scatterplot recording (Desrochers, Hile, & Williams-Moseley, 1997; Neef & Peterson, 2007). In ABC continuous recording, observers record the target behavior and predetermined environmental events in the participant’s natural setting (e.g., the classroom). Because all events are continuously recorded, conditional and unconditional probability correlations can be conducted. In ABC narrative recording observers record all events that immediately precede and follow the target behavior. Because of the open-ended feature associated with this method, it allows for quality-rich information. However, it does not allow for determination of the background probability of events.

Some advantages of descriptive assessments are that they allow for precise measurement of environmental events and behavior, allowing for the identification of naturally occurring behavior and environmental event relations. Information obtained during descriptive analyses may help guide clinicians on specific antecedent and consequent events to include in an empirical analysis. Although the direct observation of behavior under naturally occurring environmental conditions improves ecological validity, the main disadvantage of descriptive assessments is that they have been shown to have poor predictive validity for identifying behavioral function (Hall, 2005; Lerman & Iwata, 1993; Thompson & Iwata, 2007). Another disadvantage of descriptive
assessments is that the assessment depends on the accuracy of the descriptive accounts by the observer and therefore, interpretations of events rather than objective recordings are often provided—compromising the integrity of the assessment and subsequent data (Lennox & Miltenberger, 1989). Furthermore, they can be complicated and time consuming to implement. For example, when comparing the three methods of functional assessment, Hall (2005) found that descriptive assessment required approximately 10 hr compared to the 2 hr functional analysis and 15 min informant-based questionnaire. While descriptive assessments are more scrupulous than simply relying on informant-based assessments, the only functional assessment that actually demonstrates control of challenging behavior is experimental functional analysis.

In the third type of FBA method, the functional analysis (FA), antecedent and consequences similar to those occurring in the participant’s natural environment are systematically manipulated so that their separate effects on behavior can be observed and measured. Typically, the analysis is not conducted in an individual’s natural environment but in a controlled setting, which allows a clinician to better control the environmental variables that may be related to the target behavior than the control present in naturally occurring situations. The FA is considered the most rigorous FBA method as it includes specific establishing operations (Michael, 1993) that attempt to evoke behavior in a particular operant class (e.g., deprivation of attention in the attention condition, nonpreferred tasks in the demand condition) and involves the direct manipulation of the hypothesized maintaining contingencies (e.g., delivery of contingent attention in attention condition, escape from nonpreferred tasks in the demand condition). These features are unique to FAs, and distinguish FAs from the other categories of FBA, making it the only
method that demonstrates control of the target behavior (Desrochers et al., 1997; Lennox & Miltenberger, 1989; Neef & Peterson, 2007).

Iwata and colleagues (1982/1994) developed a functional analysis procedure that involved alternating test conditions – contingent attention, contingent escape, and alone – and a control condition. In each test condition, a potential motivating operation (i.e., lack of attention) is manipulated and a potential corresponding source of reinforcement (i.e., attention) is delivered contingent on the target behavior. In the control condition, potential motivating operations are removed (i.e., the participant has access to leisure items and attention and no demands).

A functional analysis (FA) involves the direct observation and measurement of SPB under conditions in which some environmental event is systematically manipulated in order to identify the individual and idiosyncratic conditions associated with SPB. In fact, FA is the only assessment method that allows for determination of function. Therefore, it is potentially the most helpful in informing reinforcement-based treatment (Pelios, et al., 1999). A FA extends interview and observation techniques to embrace the scientific goals of description, prediction, and control. The development of an experimental analysis assessment that embraces objectivity through direct measurement, tentativeness by demonstrating control prior to identifying controlling variables, and parsimony by explaining SPB without relying on hypothetical constructs has allowed clinicians to extend past behavior modification (i.e., simply knowing how to change behavior) and understand why behavior changes, when it is likely to change, as well as how to change it. FA allows basic behavior processes to be understood within the framework of socially relevant behavior and subsequently allows ABA to devise a multi-
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faceted but collective behavior-change technology to replace the unexplained successes of disconnected treatment (Baer, Wolf, & Risley, 1968). Whereas indirect and descriptive assessments may identify correlational relations between environmental events and behavior, identifying behavioral function of SBP with a FA better fine-tunes the intervention process by increasing the probability that effective behavioral interventions are designed and implemented according to contingencies that are personally relevant to an individual. Furthermore, clinicians responsible for treating SPB by designing and implementing behavioral interventions can use FA to gain a better understanding about relevant personal and reinforcement histories before intervening. Lastly, treatment informed on the functional relations identified in FAs are likely to be higher quality treatments associated with long-term reductions in SPB (Iwata, Pace, Cowdery, & Miltenberger, 1994; Lindberg, Iwata, Roscoe, Worsdell, & Hanley, 2003).

Iwata and Worsdell (2005) discuss how the potential disadvantage of an FA temporarily strengthening or increasing the rate of behavior to undesirable levels can make conducting a FA impractical when the target behavior is dangerous (e.g., aggression, self-injury; as cited in Hofstadter-Duke, 2011, p. 29). Additionally, a functional analysis of problem behavior that occurs infrequently may be difficult. Because functional analyses often require time, resources, and adequate professional training, clinicians may choose to conduct descriptive or indirect assessments that are less complex to implement.

A number of researchers have conducted surveys to identify clinicians’ perceptions and use regarding functional assessment methods. For example, Desrochers, Hile, and Williams-Moseley (1997) mailed a 7-page, 210-item questionnaire to 300
members of the Psychology Division of the American Association on Mental Retardation nation-wide. In this survey, Desrochers asked practitioners if they used functional assessment procedures, and if so, which type (i.e., indirect assessments, descriptive observations, or experimental analysis) did they use most often and whether the information obtained was used to inform treatment. The researchers also asked for demographic information, client characteristics, types of functional assessments clinicians frequently used along with the perceived usefulness of each, and barriers encountered while conducting functional assessments. Definitions for each functional assessment type were included in the survey.

The initial mailing included a cover letter, the questionnaire, and a stamped return envelope. A week later, researchers sent a postcard thanking the respondent for a prompt reply, or reminding them to complete a return the questionnaire. Of the 300 mailed questionnaires, 125 (42%) were returned. Respondents reported that all functional assessments methods were useful for treatment development. However, they noted that they more frequently conducted indirect and descriptive assessments than they did functional analysis. When asked to rank order the type of functional assessment that was most informative for determining behavioral function, respondents most often ranked descriptive analyses, followed by interviews and clinical judgment. By contrast, less than 3% of respondents ranked functional analysis as being the most useful method for identifying behavioral function. Contradictory findings, however, call into question the reliability of the data. For example, more respondents (47%) reported always basing their treatment decisions on a functional analysis of the cause of behavior than those (2.5%) who rated using functional analysis approach frequently.
In their discussion, Desrochers et al. (1997) comment that one explanation for some of their contradictory findings is that respondents may not have been familiar with the distinction between a functional analysis and a functional assessment. However, because the authors included definitions of these terms, this may not be the sole explanation. Although Desrochers et al. made a contribution to the literature by reporting individuals’ use and perceptions of functional assessment methods; these results may have limited generality. Respondents were asked to identify the amount of time they spent assessing and treating SBP; only 31% of respondents indicated spending 50% or more of their clinical duties assessing and treating behavior. Additionally, the members of the psychology division of the AAMR were mostly applied behavior analysts, clinical/counseling psychologists, and school/education psychologists with educational backgrounds and years of experiences differing from those of the staff who are routinely responsible for conducting behavioral programming. It is also likely that these respondents have more limited amount of contact with individuals exhibiting challenging behaviors than staff responsible for conducting function-based assessments. Therefore, the survey outcomes may not reflect the general practices of individuals who routinely assess and treat problem behavior of individuals.

Ellingson, Miltenberger, and Long (1999) attempted to address the generality limitation by targeting persons responsible for the assessment and treatment of SBP. Their survey attempted to assess practitioners’ perceptions of various functional assessments and determine the percentage of clients who had received a functional assessment of their problem behavior within the past year. To this end, the authors contacted all agencies in North Dakota who served individuals with developmental
disabilities to identify how many for their employees were involved in the assessment and treatment of problem behavior. The authors mailed a cover letter, the questionnaire, and a stamped return envelope for each of the identified employees to each agency. Agencies were responsible for distributing the mailings to the employees identified as being direct service staff responsible for the implementation and interpretation of functional assessment methods. For agencies that returned fewer than half of the surveys, a second letter with additional surveys was mailed, thanking them for any initial responses, and requesting that they complete the remaining questionnaires. The authors received 36 completed surveys of the 74 originally mailed, yielding a 48.6% return rate.

The survey consisted of two sections. In the first section, the survey contained questions about respondent demographics (e.g., age, sex, position title, education, etc.), their perception of the importance of functional assessment for developing treatment, a description of the information that could be obtained from a ‘good’ functional assessment, and provided definitions of the functional assessment methods listed in the survey. The second section was divided into the three functional assessment categories: indirect methods, direct methods, and functional analysis. For each category, the survey contained questions on the percentage of clients with whom the procedure was used, the amount of training the respondents had in the use of the procedure, whether the participant had the necessary materials for the procedure, how easy the procedure was to use, how effective the procedure was for identifying behavioral function, and how useful the procedure was for gaining information leading to effective treatment.

As in the Desrochers et al. (1997) study, respondents indicated that they found functional assessment techniques useful in informing treatment; however, they reported
using direct observations and interviews with more clients than functional analyses. Ellingson et al. reported that respondents indicated that behavioral interviews and functional analysis in the natural setting (FA [n/s]) were more effective in determining behavioral function. This contrasted with findings by Desrochers et al., who reported that respondents ranked descriptive analysis as the most informative assessment for determining behavioral function. However, although 50% of respondents indicated using FA (n/s) with 81-100% of their clients; Ellingson and colleagues defined FA (n/s) as ‘the manipulation of the antecedent and/or consequences in the natural environment to measure their influence on behavior’ (p. 195). Respondents may have thus confused this definition with treatment plans in which environmental variables were manipulation and as a result, this statistic is likely an overestimation of actual FA (n/s) use. Interestingly enough, although behavioral interviews were ranked as being used with the most clients, respondents also indicated that they had received the least amount of training on implementing behavioral interview. It would appear that clinicians frequently employ functional assessment methods in which they have not received training, which presents validity issues. While respondents acknowledge FA as the most useful method for obtaining information needed for effective treatment, results of both Desrochers et al. (1997) and Ellingson et al. (1999) indicate that indirect and descriptive methods of functional assessment are being endorsed as more frequently used methods of assessment.

Although 64% of respondents correctly identified the information that could be obtained from a good functional assessment (antecedents and consequences, function or purpose of behavior), 28% of respondents provided answers that were inconsistent with
they type of information that a functional assessment could provide (i.e., mood of the client). The researchers found this to be peculiar considering that the information from the rest of the questionnaire suggested that respondents frequently used most of the functional assessment procedures. A limitation with the current survey was the small number of persons surveyed and that school personnel were not included in the sample.

Neither study ensured that their sample adequately reflected the practices of those professionals responsible for behavior programming. Desrochers et al.’s participants spent little of their clinical duties assessing and treating SPB while Ellingson et al.’s respondents did not include public school professionals where the majority of the IDD population retain their services. In order to ensure a survey yields results that can be drawn upon to create solutions, the population sampled must not only be responsible for behavioral programming (e.g., BCBAs), but also work where services are routinely being provided (e.g., public schools). Similar to these past studies, the purpose of the current study was to perform an examination of practitioners’ perceptions and use of indirect, descriptive, and experimental methods. In particular, we sought to determine whether practitioners are using functional analysis or if they are more likely to use descriptive assessments, despite conclusive evidence that descriptive assessments are not the most appropriate for identifying functional relations (Hall, 2005; Lerman & Iwata, 1993; Noell et al., 2001; Thompson & Iwata, 2007). Additionally, this study attempted to identify why practitioners use the methods they choose. Lastly, we assessed the documented use of FAs, the FA results and conclusions, and the interventions informed by the FA outcomes in an applied setting.
Study 1: In-House Survey

Participants. Fourteen individuals, who worked as clinical program specialists at a private, nonprofit residential school for individuals with autism in Massachusetts, served as respondents. These individuals were responsible for implementing behavior plans for 6 to 9 of 108 residential students. Two respondents were teachers who were supervised by clinical program specialists. For students who had recently transitioned from a previous team to a new team within the school, the researcher attempted to conduct follow-up meetings with the professional who served as Program Specialists at the time the FA was conducted.

Materials. The survey consisted of an 11 column Microsoft® Excel® spreadsheet (see Appendix A). The first column listed the residential students alphabetically and organized by their clinical caseload (by the individual who served as their Program Specialist). For the second column, the top row instructed the respondent to list the three most challenging problem behaviors for each of the residential students who they supervised. For the 9 subsequent columns, the top row contained an instruction or a question for each of the three target behaviors listed for each of the residential students on their caseload. For Column 3, the question asked the respondent to list yes or no to the question “Has a functional analysis been conducted in the past 5 years on this behavior? If yes, please list the date. For Column 4, the respondent was asked to respond yes or no to the question “Is the data file and graph for the functional analysis available?” For Column 5, the respondent was instructed “Please note how many sessions were included in the functional analysis and the duration of the sessions.” For column 6, the questioned asked the respondent to note in which environment (e.g., in the student’s classroom, at
the student’s residence, or in the research room, etc.) the functional analysis was conducted. For column 7, the respondent was asked to indicate whether the functional analysis yielded differentiated or undifferentiated pattern of responding. If the pattern was clear interpretation of the data was included in this column. For column 8, the respondent was asked whether the functional analysis informed subsequent behavioral intervention. If yes, the treatment was noted. If the participant indicated that FA results informed subsequent treatment, for column 9, the questions asked whether the treatment resulted in clinically meaningful behavior reduction. For column 10, respondents were asked if a graduate student conducted the functional analysis for their field placement or for a project/class requirement. If “yes”, for column 11 respondents were asked to indicate if the functional analysis was considered to be a clinical priority. If no, they were asked to explain. For any column, if the information was unknown, “DK” was used to denote that the participant “didn’t know” the response.

Procedure. We conducted a survey to determine the assessment(s) used to identify the function of challenging and disruptive behavior of individuals with developmental disabilities. The researcher met with program specialists to administer the survey for each of the residential students on their caseload. If the Program Specialist was unavailable to meet (e.g., out on maternity leave), the researcher met with a teacher who worked under the supervision of the Program Specialist and was reported to have extensive knowledge of the students’ functional analyses. Prior to meeting with each Program Specialist, the first author listed the students in alphabetical order in the Excel spreadsheet. Then the researcher administered the survey by first asking for the top 2-3 behaviors targeted for behavioral intervention. Then for each behavior, the researcher
asked the questions in each of the column headings and typed the answers into the formatted Excel® grid on a laptop. For each FA reviewed, if the graph of the FA was available the first author and the Program Specialist visually inspected the data on a second computer.

**Response measurement and data analysis.** Respondents were asked to indicate the results of the FA conducted for each target behavior. The first author and program specialist visually inspected the data sets together. When differential responding occurred, the researcher noted the pattern of responding (e.g., differential responding in extended alone) along with the specialists’ interpretation of the data (e.g., maintained by automatic reinforcement). Treatment was considered effective when behavior rates either met or showed progress on the Individual Education Plan’s behavioral objective (i.e., over a 10-week period, the mean rate of head directed self-injury will decrease below baseline levels). When possible behavioral graphs of the target behavior were visually inspected, taking note of when the informed treatment was implemented. However, data regarding treatment assessment was not routinely available.

We calculated the percentage of target behavior that had been assessed with an FA; taking the sum of the total number of identified target behavior and dividing by the total number of completed FAs. The percentage of functional analysis with either a clear function identified (e.g., differential responding suggesting maintenance by attention, escape, demand, etc.) or no clear function identified (e.g., low or highly variable responding across all conditions; high responding in control) was calculated. Percentages were calculated by dividing the number of FAs with a particular outcome by the total number of completed FAs. Of the FAs that resulted in clear determination of behavioral
function, we calculated the percentage of FAs that informed effective treatment by dividing the number of conclusive FAs that informed effective treatments by the total number of conclusive FAs.

**Results and Discussion**

For the 108 residential students listed in Column 1 of the survey, a total of 246 target behaviors were identified as being clinical priorities for reduction (Table 1 contains summary of internal review). The topographies of behavior that were assessed with FA are depicted in Figure 1. The most commonly addressed topography was self-injury (31.3%), followed by aggression (26.3%) and stereotypy (15.2%). Practitioners assessed FAs on 115 (45.5%) of target behavior listed. Of these FAs, 70 (60.9%) resulted in conclusive outcomes, whereas 45 (39.1%) did not (e.g., low responding in all conditions). Of the FAs with conclusive outcomes, the most commonly identified controlling variable was automatic reinforcement (38.6%), followed by social negative reinforcement in the form of escape (35.7%), social positive reinforcement in the form of attention (11.4%) and in the form of access to tangibles (2.9%). Multiple contingencies (e.g., automatic and attention; 8.6%) and idiosyncratic maintaining variables (i.e., escape from loud noises; 2.9%) were identified less frequently (see Figure 2). For only severe problem behavior (SPB) (e.g., aggression, self-injury, property destruction), the most commonly identified controlling variable was negative reinforcement (escape) in 26.33 (56.9%), followed by social positive reinforcement (attention) in 26.5 (20.3%) of conclusive FAs, respectively (fractions used to indicate maintenance by multiple contingencies; Figure 3). Overall, 43 (61.4%) of conclusive FAs informed treatment decisions for behavioral reduction and 32
(74.4%) of those treatments were reported to effective in reducing behavior rates from previous levels (Figure 4).

Although an FA was conducted with less than half of the problem behavior reported, when they were conducted, they were often used to inform treatment. In addition, treatment was reported to be effective in reducing the problem behavior for 32 (74.4%) treatments that were informed by an FA. Because this survey was conducted in a residential school for individuals with autism, it is unclear whether these findings would generalize to other institutions (e.g., public school, day school, etc.). For example, it is possible that fewer FAs may be conducted in settings that may have fewer resources to conduct FAs. Study 2 was designed to better assess the FBA practices and perceptions of clinicians within the state of Massachusetts.

Study 2: Statewide Survey

Method

Participants. We selected respondents by conducting nonrandom, convenient sampling. First, we identified and sent surveys out to 750 BCBAs in the state of Massachusetts. Email addresses were found using the online registry of BCBAs on the Behavior Analyst Certification Board website (www.bacb.com). Second, we sent surveys to two groups of individuals by using email lists used by Graff and Karsten (2011). These groups included 373 individuals who attended a regional behavior analysis conference in October 2009 and 360 individuals who worked in 38 different public schools and 30 private agencies in Massachusetts.

Materials. The survey (see Appendix B) included a brief introduction that reminded respondents of the amount of time required to complete the survey (15 min)
and the possible prizes they could win by completing the survey. The survey consisted of four open-ended questions and 20 multiple-choice questions. The first nine close-ended questions asked for demographic information about the respondents. For example, questions included the size and type of agency where the respondent works, the population they serve. Sixteen questions were content-based, and included questions regarding the methods of function based assessment they use to assess the function of problem behavior, their opinion of the whether descriptive analyses or functional analysis is necessary or sufficient for determining behavioral function, and their perceptions of potential barriers for conducting functional analyses. We did not ask respondents to list their age and/or gender. The open-ended questions were designed to assess respondents’ previous knowledge and experience with functional analysis compared to the descriptive and indirect FBA. For example, one question was designed to collect information regarding the degree to which respondents were familiar with the terms “descriptive assessment,” “indirect assessment,” and “functional analysis”. For content-based close-ended questions, we included definitions for each type of behavior assessment (functional analysis, descriptive assessment, and indirect assessment) for each question that contained these terms in either the question or answer options. Functional analysis was defined as “systematically manipulating environmental events under different conditions while directly observing and measuring problem behavior”; descriptive assessment was defined as “involves direct observation of behavior and environmental events, but no manipulation of environmental events”; and indirect assessment defined as “involves questionnaire or interview but no direct observation of behavior”. In addition, for content-based questions, open-ended questions were presented prior to close-ended
questions to prevent the possibility of respondents using included definitions (e.g., a definition of a functional analysis) from the close-ended portion to inform their answers during the open-ended portion (e.g., questions regarding the type of information a functional analysis can provide). In addition, after submitting their answer to a question, participants were not able to return to that question.

The survey questions were created based in part of the surveys conducted by Desrochers et al. (1997), Ellingson et al. (1999), Schreck & Mazur (2008), Brown, Michaels, Olivia, & Woolf (2008), and Graff & Karsten (2011). The questions was reviewed for face validity by various professionals and behavior analysts all of whom had or were in pursuit of their PhD in ABA and revised based on their comments.

**Procedure.** We posted the 24-item online questionnaire on an Internet survey hosting website (i.e., surveymonkey.com). The first author sent an email to each respondent introducing herself as a Master’s student working on her thesis. The message asked them to complete a survey about their opinion and use of functional assessments within a 2-week period. In the email message, respondents were informed that they could provide their e-mail address to be entered into a raffle for a $100 gift card, a $50 gift card, and one of two $25 gift cards. These gift cards were awarded to four randomly selected respondents after the survey was closed. At the end of the email, there was a link to the survey on the surveymonkey.com website. To encourage objective responding, the purpose of the survey was not disclosed. Surveys were electronically and automatically submitted to the researcher from the website.

**Response measurement and data analysis.** The total number of emails was calculated by subtracting the total number of “dead emails” from the total number of
emails sent. Dead emails were the emails that resulted in automatic response messages being sent to the first author’s inbox. These messages either announced that the attempted email address was deactivated, the domain name was unrecognizable, or the BCBA listed on the online registry no longer wished to be contacted from this domain.

Surveymonkey.com automatically generated the number of individuals who completed the survey. We calculated the return rate by dividing the number of completed surveys by the number of successfully sent emails.

For each close-ended (multiple-choice) question, the percentage of participants who selected each response option was calculated. If a question allowed respondents to select more than one response, those totals may exceed 100%. Responses to content-based questions (e.g., questions inquiring about use and perception of function-based assessments) were analyzed using a tool included on the surveymonkey website. The tool allowed the results of a particular question to be compared to other questions in the survey; for instance, certain results could be analyzed according to specific parameters such as BCBA certification status and employment setting (i.e., do non-BCBAs receive FA training that is less hands on than that received by BCBAs?).

Responses to open-ended questions (e.g., when respondents selected “other” as an answer options they were asked to specify) were independently reviewed by the first author and a second observer to determine the accuracy of the information entered; did the response a) provide an answer to the question asked, b) provide a response not consistent with the question asked, or c) provide a response that could not be scored (e.g., hhhhhhh, hi, etc.). Interobserver agreement was calculated by dividing the number of
agreements by the total number of responses and multiplying by 100, yielding a 98.2% agreement.

**Results and Discussion**

Of the 1483 email addresses to which the invitations were sent, 525 automatic responses were received informing the researcher that the email address was no longer active or that the addressee did not wish to be contacted from the BACB site (i.e., had no email registered). Of the 958 effectively sent emails, 275 (28.7%) surveys were completed. Authors who conducted meta-analyses of surveys have reported an average return rate of 35%-to-40% (Cook, Heath, & Thompson, 2000; Sheehan, 2001). Witmer, Colman, & Katzman (1999) reported that surveys sent out through e-mail often result in response rates of 20% or lower. The 28.7% return rate of the current study is lower than that obtained by Desrochers et al. (1997; 42%) and Ellingson et al. (1999; 48.6%). However, these studies included considerably smaller sample size (n = 74; n = 300 respectively). Although a higher return rate in the current survey would have increased confidence in a representative sample, low return rates are not necessarily correlated with sampling error (Andrews, Nonnecke, Preece, 2003).

**General demographic information.** The majority of respondents indicated that they worked in public schools (41.1%), had received a master’s degrees (73.1%), and had received a degree in behavior analysis (52.4%) or special education (29.5%). Of the 275 respondents, 72% had received Board Certified Behavior Analyst (BCBA) certification, 8.4% had received BCBA-D certification, and 4.4% had received their BCABA certification. About half of respondents indicated they were currently employed as a behavior analyst and served individuals diagnosed with autism (88%) and pervasive
developmental disorder, not otherwise specified [PDD-NOS] (59%). Complete demographic results are listed in Table 2.

**Knowledge of functional analysis.** For the open-ended question asking individuals to specify information a good functional analysis can provide, 94.2% of respondents stated that it was to identify the *antecedents, consequences, function* or *purpose* of problem behavior and 5.8% of respondents provided responses that did not describe the purpose of a functional analysis (e.g., to identify staff perceptions; to identify discrepancies between home and school related to behavior; to identify individuals’ level of life skills; to determine if the child's behaviors have improved or worsened with or without interventions). Therefore, the majority of respondents in the current study had some knowledge of the purpose of a functional analysis. Where we asked individuals to specify the information a good functional *analysis* could provide, Ellingson et al. (1999) asked participants to list the information a “good” functional assessment could provide, lumping together all functional assessment types. The current finding is somewhat discrepant from that reported by Ellingson et al., who reported that 64% of respondents could accurately answer their question.

For question number 15, asking how the respondents learned the necessary skills to conduct a functional analysis, 67.5% reported that they had received training that included instruction, direct observation and performance feedback (e.g., part of on-the-job training, part of a bachelor’s/master’s class, etc.). The second and third most frequent responses were having independently read published manuals or research articles (29.9%) and only instruction such as class lecture, workshop, or conference (28.6%), respectively.
Respondents’ answers to question number 10 are depicted in Table 3. When we asked respondents to indicate whether they heard of the terms indirect assessment, descriptive assessment, and functional analysis, only one respondent indicated that they had not heard of any of these terms. The highest percentage of respondents reported having heard of the term functional analysis (99.6%), followed closely by descriptive assessments (90.0%), and indirect assessments (89.7%).

Respondents’ answers to question number 20 are depicted in Table 4 and Figure 5. When we asked respondents whether they had served as the primary therapist, secondary therapist or data collector, or casual observer, during a functional analysis, 65.5% of respondents reported that they had served as primary therapist, 15.3% that they had served as secondary therapist or data collector, and 6.4% that they had only observed a functional analysis. Only 32 (12.9%) respondents had never witnessed a FA being conducted. Separate data analyses that filtered responses according to a particular variable were conducted. For instance, for question number 15, which asked respondents to indicate how they learned the skills necessary to conduct a FA, the responses provided by those individuals who reported that they had served as primary therapist were filtered. Of those respondents, 80.6% of primary therapists received training that included instruction, direct observation, and performance feedback compared to the 31.6% of respondents who independently read published manuals or research articles and the 26.5% of respondents that received training that only included instruction. Two respondents indicated never having received training on FA. The relative small percentage of primary therapists who learned to conduct a FA by independently reading published manuals or research articles suggests that those using ABA techniques are not
necessarily using published research articles to learn how to implement those techniques. There may be a need for ABA to investigate using a different medium to share knowledge with those practitioners routinely applying the techniques rather than continuing to rely primarily upon research journal publications.

In the surveys distributed by Desrochers et al. (1997) and Ellingson et al. (1999), the authors asked respondents to indicate the specific types of FBA that they used. However, neither study reported investigating into the respondents’ previous experience with function based assessments (i.e., whether they had ever conducted a FA; whether their current clinical responsibilities included the routine assessment and treatment of SPB, etc.). It is therefore possible that respondents may have inaccurately answered survey questions if they were unfamiliar with performing assessments and did not understand the differences between the various assessments. As the researchers pointed out, inaccurate responding may have resulted in an over- or underestimation of the actual use of functional assessments. The current study’s sample not only includes both BCBAs and public school teachers, but also considered respondents’ previous experience with functional assessments by inquiring into whether respondents were currently responsible for developing behavior intervention plans and whether they had conducted a FA (i.e., if they had served as primary or secondary therapist, collected data, observed, or had never witnessed an FA).

In the Desrochers et al. (1997) survey, only 30.7% of clinicians indicated spending a significant portion (between 50%-100%) of their time assessing and treating SPB. Respondents of the current study not only reported that they were familiar with the term functional analysis and had at least observed a functional analysis, but 89.2%
reported that they currently provide services to one or more individuals with a developmental disability. However, similar to the results of past studies, our respondents, who are responsible for the assessment and treatment of problem behavior, reported that they are not using functional analysis when conducting a function-based assessment.

**Use and perception of FBAs.** Question number 14 and 23 were designed to assess practitioner use of function-based assessments, and the responses obtained are listed in Table 5 and Figure 6. The majority (82.5%) of respondents reported that they most frequently used descriptive analyses, whereas only 11.0% of respondents reported that they conducted FAs. When only including respondents with their BCBA-D, BCBA, or BCABA, 84.7% reported that they used descriptive analyses most frequently. In fact, a greater percentage of respondents who do not have their BCBA-D, BCBA, or BCABA (16.2%) indicated that they used FAs alone most frequently than the percentage of those respondents with their BCBA-D, BCBA, or BCABA (10.0%). In addition, a higher percentage of respondents (16.9%) who work in non-public school settings (e.g., residential school, residential treatment center, outpatient unit, early intervention, home based, etc.) reported using FAs most frequently than the percentage of respondents who work in the public schools (6.9%).

Question number 13 asked respondents whether they had written or developed a behavior program for decreasing challenging behavior within the last 5 years. The majority (94.8%) of respondents recently had been responsible for behavioral treatment. Question 12 asked respondents to indicate how many of the individuals they served who have needed an intervention for problem behavior, have received a functional analysis. Only 14.6% of respondents indicated that ALL or ALMOST ALL of their clients who
have needed an intervention for problem behavior have received a functional analysis. By contrast, 62.8% of respondents reported that ALMOST NONE or NONE of their clients have received a functional analysis. Of those respondents with their BCBA-D, BCBA, or BCABAs, 14.3% indicated ALL or ALMOST ALL; 24.1% reported about half, and 61.5% of respondents indicated that NONE or ALMOST NONE of their clients in need of a behavioral intervention for their problem behavior have received a FA. In addition, 14.4% of BCBA certified respondents versus 16.1% of non-BCBA certified respondents reported that an FA had been conducted with ALL or ALMOST ALL of their clients who were in need of a behavior treatment plan. Of those respondents who worked in the public schools, the majority (72.7%) indicated that ALMOST NONE or NONE of their clients had received an FA prior to development of a behavioral intervention (Table 6; Figure 7).

Question numbers 14 and 17 assessed respondents’ perception of how informative for treatment selection and how necessary for determining function each FBA is (see Tables 7-10). Although 67.9% of respondents indicated that experimental functional analysis is the most informative assessment tool for selecting behavioral treatment (Figure 8), only 25.9% of respondents indicated that they typically used functional analysis either alone or in combination with other assessment methods to inform the development of a behavior plan (Figure 9). More BCBAs (69.7%) than non-BCBAs (56.8%) reported that FA is the most informative assessment tool for informing behavioral treatment. However, more non-BCBA (16.2%) versus BCBA certified respondents (10.0%) reported that they used FAs most frequently. In summary, although respondents indicated that functional analysis is the most informative assessment tool for
determining behavioral function, they are not frequently conducting FAs to inform treatment development. Instead, most participants typically use descriptive assessment methods (41.7%) or a combination of descriptive and indirect assessment methods (31.6%) for informing the development of behavior plans (See Table 7; Figure 9).

Question number 22 asked respondents’ opinion regarding which FBA is “absolutely necessary” for determining function of an individual’s challenging behavior (Figure 10). Forty-two percent of respondents reported that they believed descriptive assessment alone is absolutely necessary for determining behavioral function, whereas 40.4 % of respondents reported that they believe functional analysis (alone or in combination) is absolutely necessary for determining behavioral function. Repp et al. (1988) developed treatment based on the results of ABC descriptive assessment and demonstrated that when compared to treatments not based on any prior functional assessment and results demonstrated that a successful treatment can be developed on a hypothesis of why the behavior occurs in the natural environment derived from an ABC data; there may be some validity behind the utility of using DA to develop treatment. However, subsequent literature has repeatedly substantiated that DA may fail to specifically identify potential controlling variables (Lennox & Miltenberger, 1989) and provide only correlational data (Hall, 2005). In comparison, FAs provide the most conclusive information regarding the function a behavior serves (Hall, 2005; Lerman & Iwata, 1993; Thompson & Iwata, 2007), so the low percentage of practitioners who feel FA alone (18.3%) is necessary for determining function is surprising.

Thirty-one percent of respondents reported that indirect assessment (alone or in combination) is absolutely necessary for determining behavioral function. This outcome
contradicts the finding that, the majority (94.8%) of respondents reported that indirect assessments are not sufficient for determining the function of problem behavior (Table 10). Question 17 asked if descriptive assessment is sufficient for determining behavioral function; 50.6% of respondents answered affirmatively. Of the respondents who answered ‘yes, descriptive analysis is sufficient for determining function’, 89% were BCBA-certified. Individuals working within the public schools were more likely (58.8%) to report that descriptive assessment is sufficient than were respondents who worked for non-public school agencies (44.9).

In summary, practitioners responsible for developing behavioral interventions for IDD rarely reported that FAs are absolutely necessary and frequently reported that descriptive assessment alone is sufficient for determining behavioral function. This outcome is surprising in light of recent research demonstrating that the results of descriptive assessment often do not correspondent with those obtained by FAs, indicating that descriptive assessments have poor validity for identifying behavioral function (Hall, 2005; Lerman & Iwata, 1993; Noell et al., 2001; Thompson & Iwata, 2007). Furthermore, because environmental variables are manipulated only in a functional analysis, it is the only functional assessment method that can identify controlling variables. Although descriptive assessments can be useful for obtaining information about important antecedent and consequent environmental variables that occur in the natural environment, they can only provide correlational information. Thus, they are not adequate for determining behavioral function. Although practitioners and clinicians with their BCBA certification may have received more training on how to implement an FA than respondents without their BCBA certification, in the current study it does not appear to
be the case. Question 15, which asked about the nature of FA training respondents had received, was analyzed according to BCBA-certification. The results of the question 4 which asked about the status of BCBA certification were compared to the results of question 15 and suggest that BCBAs (66.4%) had not received more hands on training (i.e., training that involved instruction, direct observation, and performance feedback) than non-BCBAs (76.5%). Respondents with their BCBA certification were no more likely to use FAs instead of descriptive and indirect assessments into their clinical practices despite their belief that FAs are the most essential tools for informing development of treatment.

In question number 20, we asked respondents to indicate their biggest barrier to conducting functional analysis. Fifty-four percent of respondents indicated that a lack of appropriate space (i.e., a space away from other individuals, breakable items, and hard or dangerous surfaces), and 53.4% of respondents indicated a lack of trained staff to assist in conducting functional analysis. Additionally, within early intervention programs (42.9%) and home-based programs (59.1%), respondents reported a lack of support or acceptance (from administration, from parents/caregivers, from teachers/clinicians, etc.) as the largest barrier to conducting FAs with their clients (see Table 11 for the complete list of noted barriers). If practitioners do not have administrative or parental approval for conducting FAs or if they lack the necessary staff and environmental settings necessary for conducting FAs, this may explain why indirect and descriptive analyses are used. Specifically, of those respondents who worked in the public school system, 66.7% reported a lack of trained staff as the top barrier to conducting FAs. Although it has been 10 years since Desrochers et al. conducted their survey, a lack of space is still reported to
be a top barrier to completing functional assessments (in the current study, specifically functional analysis).

**General Discussion**

Research has repeatedly demonstrated that functional assessment methods are useful, effective, and informative regarding problem behavior and the maintaining variables that precede and follow behavior (Carr & Durand, 1985; Durand & Carr, 1987; Carr, Newsom, & Binkoff, 1980; Favell, McGimsey, & Schnell, 1982; Horner, 1980; Rincover, Cook, Peoples, & Packard, 1979; Weeks & Gaylord-Ross, 1981). Information regarding behavior-environmental relations leads to the development of hypotheses regarding function, which can then be included in the development of function-based interventions for problem behavior (Day, Rea, Schussler, Larson, & Johnson, 1988; Gaylord-Ross, Weeks, & Lipner, 1980; Repp et al., 1988; Solnick, Rincover, & Peterson, 1977; Steege, Wacker, Berg, Cigrand, & Cooper, 1989). Although previous authors (Desrochers et al., 1997; Ellingson et al., 1999) have conducted surveys to assess how frequently these methods are used and how practitioners who use them perceive their utility, the majority of their respondents did not routinely perform clinical duties involving behavioral programming (i.e., respondents of the Desrochers et al.’s study spent less than 50% of their clinical duties assessing and treating SPB) or they did not work in the public school system (i.e., Desrochers et al. surveyed members of the AAMR; Ellingson et al. distributed their survey only to non-school agencies serving IDD). In the current study, we surveyed individuals with and without their BCBA certification and individuals who do and do not work in the public school system in the state of Massachusetts. By including respondents who frequently implement behavioral
programs for individuals with developmental disabilities, we sought to determine the perceptions and use of various functional assessment methods for informing behavioral intervention plans.

Similar to the findings of Desrochers et al. (1997) and Ellingson et al. (1999), our respondents recognized the usefulness of FA for selecting behavioral treatment. They reported using descriptive assessments and a combination of descriptive and indirect assessment procedures most frequently. According to these findings, BCBA and non-BCBA practitioners, consider descriptive assessments to be the most useful for informing behavior plans despite their perception that FA is the most informative tool for selecting behavior treatment.

Schreck and Mazur (2008) surveyed 469 BCBAs in an attempt to identify the factors that contribute to BCBAs’ use of treatments. Their results indicated that for some treatments (i.e., music therapy), BCBAs reported using a treatment despite their acknowledgement that the treatment was not supported by research; suggesting that BCBAs are knowingly using treatments that lack scientific validation. Instead, their results suggest that an individual’s “belief” in treatment effectiveness and in the treatment’s ability to change behavior were the variables most significantly related to their choice of treatment. Contrary to their findings, our findings suggest a potential difference between practitioner reported perception and reported use of functional analysis; simply "believing" or acknowledging that the FA is the most informative for developing effective treatment or is absolutely necessary for identifying function did not equate to frequent use of FA. One potential explanation for this finding is barriers that prevent the use of functional analysis (e.g., a lack of trained staff and appropriate setting).
In general, the results of this and past surveys suggest that although practitioners acknowledge the usefulness of functional analysis for informing treatment decisions, they may not implement FAs due to a number of perceived barriers. Because functional analysis ensures effective function-based treatment, it would be prudent for practitioners and their administrators to take additional measures to ensure that staff is adequately trained and that appropriate resources (e.g., a dedicated assessment room) are available for conducting FAs in both public school systems and private agencies serving individuals with developmental disabilities. In addition, there are a number of reported modifications to the standard FA that may make FAs less time and resource intensive. For example, FAs can be conducted in classrooms (Berg et al., 2007; Bloom, Iwata, Fritz, Roscoe, & Carreau, 2001), which are a more naturalistic setting increasing ecological validity without requiring the use of additional space. Vollmer, Marcus, Ringdahl, & Roane (1995) demonstrated the utility of using shorter duration sessions (e.g., 5 min) which could be implemented in a variety of applied settings without completely disrupting a typical daily routine. Practitioners could train staff to conduct these modified FAs and schedule routine procedural integrity checks to facilitate the use of FAs and increase the likelihood of developing an effective treatment plan.

Failure to identify the prevailing contingency controlling problem behavior prior to developing behavioral plans not only delays effective treatment but also potentially exposes an individual to unnecessarily restrictive interventions. Solnick, Rincover, & Peterson (1977) demonstrated that time out can have both reinforcing and punishing properties even though time out is typically a treatment selected for decreasing the frequency of a behavior. Without first assessing function, treatments can “back-fire” and
produce counter-therapeutic effects such as strengthening the maintaining contingency instead of disrupting it, likely making the behavior more resistant to future treatment attempts. Given the resource limitations in a public school setting, practitioners within the public schools may continue to rely on indirect or descriptive analyses for developing treatment plans for problem behavior.

A potential limitation of Study 1 was that no data regarding treatment implementation was collected for the treatments that were indicated as being informed by FA outcomes and effective in decreasing rates of behavior. For instance, not all of the treatments that had been informed by FA results were reported as effective, but it is possible that improper or inconsistent treatment implementation, rather than fault with the FA, prevented treatment effectiveness. In Study 2, we did not include a question asking respondents about their experience with severe problem behavior. Because the majority of respondents worked in the public school setting, it is likely that they have limited experience with severe problem behavior with safety risks to either the client or to others and are therefore more likely to use less rigorous assessment methods to identify behavioral function. Another potential limitation of this survey is that for questions where “other” was an answer selection, respondents were instructed to specify their answer in an open-ended format. In these open-ended sections, respondents’ answers were often difficult to score because they often provided information other than a response to the question (e.g., when asked to specify the combination of function based assessments typically used to inform treatment development, respondents explained how to conduct a treatment analysis).
Descriptive assessment, the most frequently used FBA for informing treatment among Massachusetts professionals, is time consuming and has questionable validity and therefore should not be considered an acceptable alternative to FA for identifying controlling variables. Despite frequently using descriptive analysis, most respondents reported that FA was the most informative FBA for treatment selection. Both the current survey and the study conducted by Desrochers et al. (1997) identified lack of appropriate environmental conditions in which to conduct an FA as the top barrier to conducting FA with clients who need behavioral intervention plans. Therefore, future research could be conducted to develop FAs that can be conducted in a typical classroom or home setting with limited staff availability. Additionally, ensuring that professionals responsible for assessing and treating challenging behavior of individuals with developmental disabilities receive adequate training on conducting FA should be a top priority of public schools and private agencies alike. Staff members go through various trainings or workshops throughout their employment with an agency and with functional assessment being mandated by IDEA, it seems feasible that one such training could cover the hierarchy of FBA, with an emphasis being placed on how to adequately conduct FAs given the resources professionals have available.
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Analysis*, 28, 225–226
Assessment of the convergent validity of the Questions About Behavioral
Function Scale with analogue functional analysis and the Motivation Assessment
methodology on treatment choice for self-injurious and aggressive
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self-injurious behaviors on hypotheses of their causes. *Journal of Applied
Behavior Analysis*, 21, 281-289.
behaviors of persons with developmental disabilities in school settings. *Journal of


## Appendix A

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Appendix B

1. What is the highest degree you hold? (Select one)
   - High School Diploma
   - Associate’s Degree
   - Bachelor’s Degree
   - Master’s Degree
   - PhD.
   - Other (please specify)

2. In which discipline did you receive your degree? (Select all that apply)
   - Behavior Analysis
   - Communication Disorders
   - Education
   - Liberal Arts
   - Physical/Occupational Therapy
   - Psychology
   - Speech/Language Pathology
   - Special Education
   - Social Work
   - Other (please specify)

3. Are you currently a Board Certified Behavior Analyst? (Select one)
   - Yes-BCABA
   - Yes-BCBA
   - Yes-BCBA-D
   - No

4. Which best describes your current position? (Select one)
   - Behavior Analyst
   - Direct Care Provider
   - Parent
   - Line Therapist
   - Teaching Assistant/Paraprofessional
   - Licensed Special Education Teacher
   - Consultant
   - Social Worker
   - School Psychologist
   - Other (please specify)
5. What best classifies the agency you work in? (Select one)

- Early Intervention program
- Public school
- Day school program
- Home-based program
- Residential school
- Residential treatment center
- Outpatient clinic
- Inpatient unit
- Other (please specify)

6. What best describes the population your agency serves? (Check all that apply)

- Intellectual Disability
- Learning Disorders
- Physical Disability
- Communication Disorders
- Autism
- Rett’s Disorder
- Childhood Disintegrative Disorders
- Asperger’s Disorder
- Pervasive Developmental Disorder, Not Otherwise Specified
- Attention Deficit Disorder/Attention Deficit Hyperactivity Disorder
- Oppositional Defiant Disorder or Conduct Disorder
- Disruptive Behavior Disorder, Not Otherwise Specified
- Feeding and Eating Disorders (include Pica and Rumination)
- Tic Disorders
- Elimination Disorders
- Mood Disorder
- Depressive Disorder
- Bipolar Disorders
- Anxiety Disorders
- Other (please specify)

7. What best describes the general functioning level of the population your agency serves (check all that apply)?

- Mild Special Needs (largely independent on academic, hygiene, and domestic tasks; exhibits conversational language)

- Moderate Special Needs (exhibits basic repertoire of comments, requests)

Appendix B (Con’t)
8. How many individuals with special needs does your program serve?

- One. I am a parent managing my child’s program.
- 1-10
- 11-25
- 26-50
- 51-75
- 76-100
- 101-125
- 126-150
- 151-175
- 176-200
- 201-250
- 251-300
- 301-500
- Over 500

9. Prior to participating in this survey, had you ever heard the term “functional analysis”? (Select one)

- Yes
- No

10. Provide a description of the information that can be obtained from a functional analysis. (100 CHARACTER LIMIT)

11. How many individuals do you serve? (i.e., how many clients are in your classroom or are included in your case load?)

- 0
- Other (please specify) __________

Content Questions
12. For the individuals you serve who have needed an intervention for problem behavior, how many have received a functional analysis? (Select one)

(Please note: a functional analysis is not the use of indirect measures or direct observation in the natural environment; rather an EXPERIMENTAL FUNCTIONAL ANALYSIS is systematically manipulating environmental events under different conditions while directly observing and measuring problem behavior)

- All
- Almost all
- About half
- Almost none
- None

13. Have you developed or written a plan for decreasing an individual’s disruptive or challenging behavior (e.g. stereotypy, tantrums, or self-injury) within the last 5 years?

- Yes
- No

14. If yes (to Question 13), what type of functional assessment(s) do you typically use to inform the development of the behavior plan? (Select one)

- Indirect Assessment (i.e., does not involve any direct observation of behavior)
- Descriptive Assessment (i.e., involves the direct observation of behavior but no manipulation of environmental events)
- Experimental Functional Analysis (i.e., involves the direct observation of behavior but no manipulation of environmental events)
- Combination of methods (Please specify combination) ____________________________ ____________________________________________________________________________ ____________________________________________________________________________

15. If you checked experimental functional analysis (either individually or as part of a combination) in Question 14, how did you learn the skills necessary to conduct an experimental functional analysis? (Check all that apply)
(Please note: a functional analysis is not the use of indirect measures or direct observation in the natural environment; rather an EXPERIMENTAL FUNCTIONAL ANALYSIS is a pretreatment assessment based on direct observation and measurement of challenging behavior. It involves at least two conditions in which some environmental event is manipulated [the presentation or removal of attention/demands/a toy/etc.] in an attempt to demonstrate a relation between the environmental event and the challenging behavior)

- Training that included instruction, direct observation and performance feedback. Please specify where you received training (e.g., part of on-the-job training, part of a bachelor’s/master’s class, etc.):

- Training that included only instruction (e.g., class lecture, workshop, or conference). Please list presenter &/or conference, or level of class lecture:

- I have independently read published manuals or research articles

- I have never received training on functional analysis

- Other (please specify)

16. Which of these statements most accurately reflects your current belief regarding functional assessment methods? (Select one)

- Descriptive assessment (i.e., involves the direct observation of behavior but no manipulation of environmental events) is the most informative assessment tool for selecting behavioral treatment

- Indirect assessment (i.e., does not involve any direct observation of behavior) is the most informative assessment tool for selecting behavioral treatment

- Experimental functional analysis (i.e., systematically manipulating environmental events under different conditions while directly observing and measuring problem behavior) is the most informative assessment tool for selecting behavioral treatment

- A strong working history and general experience with an individual is the most informative assessment tool for selecting behavioral treatment

17. In your opinion, are functional assessments in the form of descriptive analysis (i.e., involves the direct observation of behavior but no manipulation of environmental events) sufficient for determining the function of problem behavior? (Select one)

- Yes, descriptive analysis are sufficient for determining the function of problem behavior

- No, descriptive analyses are not sufficient for determining the function of problem behavior
18. In your opinion, are functional assessments in the form of indirect assessment (i.e., does not involve any direct observation of behavior) sufficient for determining the function of problem behavior?

- Yes, indirect assessments are sufficient for determining the function of problem behavior
- No, indirect assessments are not sufficient for determining the function of problem behavior

19. Have you, yourself, conducted a functional analysis? (Select one)

(Please note: a functional analysis is not the use of indirect measures or direct observation in the natural environment; rather an EXPERIMENTAL FUNCTIONAL ANALYSIS is systematically manipulating environmental events under different conditions while directly observing and measuring problem behavior)

- Yes-primary therapist
- Yes-secondary therapist/data collector
- No-I informally observed the assessment (no data collection)
- No

20. What do you view as your biggest barriers to conducting an experimental functional analysis? (Check all that apply)

(Please note: a functional analysis is not the use of indirect measures or direct observation in the natural environment; rather an EXPERIMENTAL FUNCTIONAL ANALYSIS is systematically manipulating environmental events under different conditions while directly observing and measuring problem behavior)

- Personal lack of knowledge of experimental functional analysis procedures
- Lack of support or acceptance of procedure (e.g., from administration, from parents/caregivers, from teachers/clinicians, etc.)
- I don’t feel that it is ethically appropriate to potentially reinforce challenging or disruptive behavior in the process of identifying the function
- Lack of client availability or time to complete functional analysis assessment
- Lack of funds to purchase materials needed for assessments
- Lack of space to conduct assessments (i.e., lack of space away from other students, breakable items, and hard or dangerous surfaces)
- I don’t feel it is safe to conduct an experimental functional analysis
- Lack of trained staff to assist in conducting experimental functional analysis
I don’t think functional analyses are necessary for determining a behavioral function
- Other behavior(s) or IEP objectives take priority
- Other (please specify)

21. Which do you feel is absolutely necessary for determining the function of an individual’s challenging or disruptive behavior? (Select one)

- Indirect Methods (i.e., do not involve any direct observation of behavior)
- Descriptive Methods (i.e., involves the direct observation of behavior but no manipulation of environmental events)
- Functional Analysis (i.e., systematically manipulating environmental events under different conditions while directly observing problem behavior)
- Combination of methods (please specify)

22. Which functional assessment method do you use most frequently and why? (Select one)

- Indirect Methods (i.e., do not involve any direct observation of behavior)

- Descriptive Methods (i.e., involves the direct observation of behavior but no manipulation of environmental events)

- Experimental Functional Analysis (i.e., systematically manipulating environmental events under different conditions while directly observing problem behavior)
Table 1
*Summary of Internal FA Review*

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Table 2

*Participant Characteristics*

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<tr>
<td><strong>Highest degree</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Master's</td>
<td>201</td>
<td>73.1</td>
</tr>
<tr>
<td>Doctorate</td>
<td>32</td>
<td>11.6</td>
</tr>
<tr>
<td>Other</td>
<td>30</td>
<td>10.9</td>
</tr>
<tr>
<td>Bachelor's</td>
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<td><strong>Discipline of degree</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavior Analysis</td>
<td>144</td>
<td>52.4</td>
</tr>
<tr>
<td>Special Education</td>
<td>81</td>
<td>29.5</td>
</tr>
<tr>
<td>Education</td>
<td>67</td>
<td>24.4</td>
</tr>
<tr>
<td>Psychology</td>
<td>50</td>
<td>18.2</td>
</tr>
<tr>
<td>Other</td>
<td>20</td>
<td>7.3</td>
</tr>
<tr>
<td>Liberal Arts</td>
<td>4</td>
<td>1.5</td>
</tr>
<tr>
<td>Speech/Language Pathology</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td>Communication Disorders</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td>Social Work</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td>Physical/Occupational Therapy</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td><strong>BCBA status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCBA</td>
<td>198</td>
<td>72.0</td>
</tr>
<tr>
<td>None</td>
<td>42</td>
<td>15.3</td>
</tr>
<tr>
<td>BCBA-D</td>
<td>23</td>
<td>8.4</td>
</tr>
<tr>
<td>BCaBA</td>
<td>12</td>
<td>4.4</td>
</tr>
<tr>
<td><strong>Position Title</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavior Analyst</td>
<td>136</td>
<td>49.5</td>
</tr>
<tr>
<td>Other</td>
<td>45</td>
<td>16.6</td>
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<tr>
<td>Licensed Special Education Teacher</td>
<td>51</td>
<td>18.5</td>
</tr>
<tr>
<td>Consultant</td>
<td>33</td>
<td>12.0</td>
</tr>
<tr>
<td>Direct Care Provider</td>
<td>6</td>
<td>2.2</td>
</tr>
<tr>
<td>School Psychologist</td>
<td>3</td>
<td>1.1</td>
</tr>
<tr>
<td>Teaching Assistant/Paraprofessional</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td><strong>Primary Work Setting</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public School</td>
<td>113</td>
<td>41.1</td>
</tr>
<tr>
<td>Other</td>
<td>64</td>
<td>23.3</td>
</tr>
<tr>
<td>Day School program</td>
<td>23</td>
<td>8.4</td>
</tr>
<tr>
<td>Residential school</td>
<td>23</td>
<td>8.7</td>
</tr>
<tr>
<td>Home-based program</td>
<td>22</td>
<td>8.0</td>
</tr>
<tr>
<td>Residential treatment center</td>
<td>14</td>
<td>5.1</td>
</tr>
<tr>
<td>Outpatient clinic</td>
<td>7</td>
<td>2.5</td>
</tr>
<tr>
<td>Early Intervention program</td>
<td>7</td>
<td>2.5</td>
</tr>
<tr>
<td>Inpatient unit</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td>----------------</td>
<td>---</td>
<td>-----</td>
</tr>
<tr>
<td>Functional assessment training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training that included instruction, direct observation and performance feedback</td>
<td>104</td>
<td>67.5</td>
</tr>
<tr>
<td>Training that included only instruction</td>
<td>44</td>
<td>28.6</td>
</tr>
<tr>
<td>I have independently read published manuals or research articles</td>
<td>46</td>
<td>29.9</td>
</tr>
<tr>
<td>Other</td>
<td>13</td>
<td>8.4</td>
</tr>
<tr>
<td>I have never received training on functional analysis</td>
<td>4</td>
<td>2.6</td>
</tr>
</tbody>
</table>
Table 3
Prior to participating in this survey, have you ever heard of these functional assessments?

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indirect Assessment</td>
<td>234</td>
<td>89.7</td>
</tr>
<tr>
<td>Descriptive Assessment</td>
<td>235</td>
<td>90.0</td>
</tr>
<tr>
<td>Functional Analysis</td>
<td>260</td>
<td>99.6</td>
</tr>
<tr>
<td>I have never heard of any of these</td>
<td>1</td>
<td>0.4</td>
</tr>
</tbody>
</table>
Table 4

*Have you conducted a functional analysis?*

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Therapist</td>
<td>163</td>
<td>65.5</td>
</tr>
<tr>
<td>Secondary Therapist/Data Collector</td>
<td>38</td>
<td>15.3</td>
</tr>
<tr>
<td>No; Informally observed (no data collection)</td>
<td>16</td>
<td>6.4</td>
</tr>
<tr>
<td>No</td>
<td>32</td>
<td>12.9</td>
</tr>
</tbody>
</table>
### Table 5

*Which functional assessment method do you use most frequently?*

<table>
<thead>
<tr>
<th>Functional Assessment Method</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indirect Assessment</td>
<td>16</td>
<td>6.5</td>
</tr>
<tr>
<td>Descriptive Assessment</td>
<td>203</td>
<td>82.5</td>
</tr>
<tr>
<td>Functional Analysis</td>
<td>27</td>
<td>11.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Percentage of BCBAs/BCABAs/BCBA-Ds</th>
<th>Percentage of non-BCBAs/BCABAs/BCBA-Ds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indirect Assessment</td>
<td>5.3</td>
<td>13.5</td>
</tr>
<tr>
<td>Descriptive Assessment</td>
<td>84.7</td>
<td>70.3</td>
</tr>
<tr>
<td>Functional Analysis</td>
<td>10.0</td>
<td>16.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Percentage of Individuals working in Public School Setting</th>
<th>Percentage of Individuals working in non-Public School Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indirect Assessment</td>
<td>2.9</td>
<td>7.9</td>
</tr>
<tr>
<td>Descriptive Assessment</td>
<td>90.2</td>
<td>75.3</td>
</tr>
<tr>
<td>Functional Analysis</td>
<td>6.9</td>
<td>16.9</td>
</tr>
</tbody>
</table>
Table 6

*For the individuals you serve who have needed an intervention for problem behavior, how many have received a functional analysis?*

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>19</td>
<td>8.4</td>
</tr>
<tr>
<td>Almost all</td>
<td>14</td>
<td>6.2</td>
</tr>
<tr>
<td>About half</td>
<td>51</td>
<td>22.6</td>
</tr>
<tr>
<td>Almost none</td>
<td>88</td>
<td>38.9</td>
</tr>
<tr>
<td>None</td>
<td>54</td>
<td>23.9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Percentage of BCBAs/BCABAs/BCBA-Ds</th>
<th>Percentage of non-BCBAs/BCABAs/BCBA-Ds</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>8.3</td>
<td>9.7</td>
</tr>
<tr>
<td>Almost All</td>
<td>5.7</td>
<td>6.5</td>
</tr>
<tr>
<td>Half</td>
<td>24.2</td>
<td>12.9</td>
</tr>
<tr>
<td>Almost None</td>
<td>37.1</td>
<td>51.6</td>
</tr>
<tr>
<td>None</td>
<td>24.7</td>
<td>19.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Percentage of Individuals working in Public School Setting</th>
<th>Percentage of Individuals working in non-Public School Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>4.0</td>
<td>11.8</td>
</tr>
<tr>
<td>Almost All</td>
<td>2.0</td>
<td>9.4</td>
</tr>
<tr>
<td>Half</td>
<td>21.2</td>
<td>23.6</td>
</tr>
<tr>
<td>Almost None</td>
<td>37.4</td>
<td>40.2</td>
</tr>
<tr>
<td>None</td>
<td>35.4</td>
<td>15.0</td>
</tr>
</tbody>
</table>
Table 7
What type of functional assessment(s) do you typically use to inform the development of the behavior plan?

<table>
<thead>
<tr>
<th>Assessment Method</th>
<th>Percentage of BCBAs/BCABAs/BCBA-Ds</th>
<th>Percentage of non-BCBAs/BCABAs/BCBA-Ds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indirect Assessment</td>
<td>1.0</td>
<td>3.6</td>
</tr>
<tr>
<td>Descriptive Assessment</td>
<td>40.9</td>
<td>46.4</td>
</tr>
<tr>
<td>FA (alone or in combo)</td>
<td>24.6</td>
<td>35.7</td>
</tr>
<tr>
<td>IA + DA</td>
<td>33.5</td>
<td>14.3</td>
</tr>
</tbody>
</table>
Table 8
Which functional assessment method do you believe is the most informative assessment tool for selecting behavioral treatment?

<table>
<thead>
<tr>
<th>Assessment Method</th>
<th>Percentage of BCBAs/BCABAs/BCBA-Ds</th>
<th>Percentage of non-BCBAs/BCABAs/BCBA-Ds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indirect Assessment</td>
<td>0.5</td>
<td>2.7</td>
</tr>
<tr>
<td>Descriptive Assessment</td>
<td>26.5</td>
<td>27.0</td>
</tr>
<tr>
<td>Functional Analysis</td>
<td>69.7</td>
<td>56.8</td>
</tr>
<tr>
<td>A strong working history</td>
<td>3.3</td>
<td>13.5</td>
</tr>
</tbody>
</table>

|                         | Percentage of Individuals           | Percentage of Individuals               |
|                         | working in Public School            | working in non-Public School Setting    |
| Indirect Assessment     | 1.0                                 | 0.7                                    |
| Descriptive Assessment  | 30.4                                | 23.8                                   |
| Functional Analysis     | 63.7                                | 70.7                                   |
| A strong working history | 4.9                                 | 4.8                                    |
Table 9
In your opinion, are functional assessments in the form of descriptive analysis sufficient for determining the function of problem behavior?

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>13</td>
<td>5.2</td>
</tr>
<tr>
<td>No</td>
<td>236</td>
<td>94.8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
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<th>Percentage of BCBAs/BCABAs/BCBA-Ds</th>
<th>Percentage of non-BCBAs/BCABAs/BCBA-Ds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>52.8</td>
<td>37.8</td>
</tr>
<tr>
<td>No</td>
<td>47.1</td>
<td>62.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Percentage of Individuals working in Public School Setting</th>
<th>Percentage of Individuals working in non-Public School Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>58.8</td>
<td>44.9</td>
</tr>
<tr>
<td>No</td>
<td>41.2</td>
<td>55.1</td>
</tr>
</tbody>
</table>
### Table 10

In your opinion, are functional assessments in the form of indirect assessment sufficient for determining the function of problem behavior?

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>126</td>
<td>50.6</td>
</tr>
<tr>
<td>No</td>
<td>123</td>
<td>49.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Percentage of BCBAs/BCABAs/BCBA-Ds</th>
<th>Percentage of non-BCBAs/BCABAs/BCBA-Ds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>4.3</td>
</tr>
<tr>
<td>No</td>
<td>95.7</td>
</tr>
<tr>
<td>Percentage of Individuals working in Public School Setting</td>
<td>Percentage of Individuals working in non-Public School Setting</td>
</tr>
<tr>
<td>Yes</td>
<td>6.9</td>
</tr>
<tr>
<td>No</td>
<td>93.1</td>
</tr>
</tbody>
</table>
Table 11
*What do you view as you biggest barriers to conducting a functional analysis?*

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal lack of knowledge of functional analysis procedures</td>
<td>19</td>
<td>7.7</td>
</tr>
<tr>
<td>Lack of support or acceptance of procedure</td>
<td>105</td>
<td>42.5</td>
</tr>
<tr>
<td>I don’t feel that it is ethically appropriate to potentially reinforce challenging or disruptive behavior in the process of identifying the function</td>
<td>17</td>
<td>6.9</td>
</tr>
<tr>
<td>Lack of client availability or time to complete functional analysis</td>
<td>101</td>
<td>40.9</td>
</tr>
<tr>
<td>Lack of funds to purchase materials needed for assessments</td>
<td>38</td>
<td>15.4</td>
</tr>
<tr>
<td>Lack of space to conduct assessments</td>
<td>133</td>
<td>53.8</td>
</tr>
<tr>
<td>I don’t feel it is safe to conduct a functional analysis</td>
<td>15</td>
<td>6.1</td>
</tr>
<tr>
<td>Lack of trained staff to assist in conducting functional analysis</td>
<td>132</td>
<td>53.4</td>
</tr>
<tr>
<td>I don’t think functional analyses are necessary for determining a behavioral function</td>
<td>23</td>
<td>9.3</td>
</tr>
<tr>
<td>Other behavior(s) or IEP objectives take priority</td>
<td>40</td>
<td>16.2</td>
</tr>
<tr>
<td>Other</td>
<td>56</td>
<td>22.7</td>
</tr>
</tbody>
</table>
ASSESSING THE USE OF FUNCTION BASED ASSESSMENTS

Figure 1. Percentage of FAs conducted on various topographies of behavior.
Figure 2. Percentage of FA yielding conclusive and inconclusive outcomes and the percentage of conclusive FAs that identified various maintaining variables.
Figure 3. Percentage of severe problem behavior maintained by automatic reinforcement, social positive reinforcement, social negative reinforcement, and idiosyncratic contingencies (e.g., escape from loud noises)
**Figure 4.** Percentage of treatments that were informed by FA outcomes that effectively reduced behavior.
Figure 5. Percentage of respondents who have conducted or observed an FA
Figure 6. Percentage of respondents who use each FBA most frequently

- Descriptive Assessment: 82.5%
- Indirect Assessment: 6.5%
- Functional Analysis: 11.0%
Figure 7. Percentage of respondents who indicated all, almost all, almost half, almost none, or none of their clients whom have needed a behavioral treatment have received a FA.
Figure 8. Percentage of respondents who indicated each method as the most informative tool for selecting treatment for disruptive behavior.
**Figure 9.** Percentage of respondents who indicate typically using each FBA method to inform treatment selection.
Figure 10. Percentage of respondents that indicate each FBA method as *absolutely necessary* for determining behavioral function.