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An Evaluation of the Utility of the Performance Diagnostic Checklist - Human Services (PDC-HS): A Comparison of Formal and Informal Assessment Strategies

by

Cherish Chalk

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We the undersigned committee hereby approve the attached thesis, “An Evaluation of the Utility of the Performance Diagnostic Checklist - Human Services (PDC-HS): A Comparison of Formal and Informal Assessment Strategies” by Cherish

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Abstract

Title: An Evaluation of the Utility of the Performance Diagnostic Checklist - Human Services (PDC-HS): A Comparison of Formal and Informal Assessment Strategies

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The PDC-HS is a performance assessment tool that assists in the identification of variables contributing to performance problems among human service employees. The purpose of this study was to evaluate the utility of the PDC-HS as a formal assessment strategy. Specifically, the PDC-HS was compared to an informal assessment strategy consisting of a single open-ended interview question and a single structured interview question. Participants included 40 supervisors in varying positions in the human services industry. Descriptive statistics were used to compare participant responses to the open-ended and structured questions to the results indicated by the PDC-HS. Results suggest that the PDC-HS is a useful tool to identify variables associated with performance problems among employees in a variety of human service settings. More specifically, the PDC-HS appears to identify variables that supervisors are not as equipped to identify without using the tool.

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To my participants, thank you for your time and for sharing your thoughts and experiences.

Dedication

I would like to dedicate my thesis to my husband Nick. My success would not have come as easily without your patience, unconditional love, and unwavering support. Thank you for everything you do for us.

An Evaluation of the Utility of the Performance Diagnostic Checklist - Human Services (PDC-HS): A Comparison of Formal and Informal Assessment Strategies

Behavior Analysis is a natural science that focuses on the laws and principles that govern the behavior of human and non-human animals (Pierce and Cheney, 2017). The basic laws and principles are derived from systematic manipulations of environmental variables in controlled environments. The experimental analysis of behavior (EAB) establishes, refines, and studies these basic principles, and applied behavior analysis (ABA) involves the application of these principles to improve socially significant behavior (Cooper, Heron, and Heward, 2007). Radical behaviorism, the philosophy underpinning behavior analysis, highlights the conceptual aspects of the science.

The process of understanding these behaviors is attained by systematically examining the influences of and relationships between environmental variables, such as antecedents and consequences, and the behaviors being examined. The improvement of these behaviors is achieved by implementing specific interventions consisting of procedures designed to either increase or decrease targeted behaviors. Functional behavior assessment (FBA) is a tool used to assist with the understanding of the targeted behaviors. It assists by identifying the environmental variables maintaining a behavior. Identifying these variables enables proper intervention selection.

In the field of ABA there are three types of FBA: functional (experimental) analysis, descriptive assessment, and indirect assessment. Functional analysis involves systematic manipulation of antecedents and consequences using direct observation and measurement in an effort to determine the variables contributing to a given behavior. Descriptive assessment methods include direct observation and measurement in the natural environment to identify variables correlated with a given behavior. Indirect assessment methods involve gathering information by

means of self-report or third-party report of information regarding a given behavior as it occurs in the natural environment.

As described by Neef and Peterson (2007), each of these assessments has advantages and disadvantages. The main advantage of a functional analysis is its ability to determine the variable(s) influencing the occurrence of a target behavior. The disadvantages of this type of assessment include: the potential for the problem behavior to temporarily strengthen or increase, the potential for the problem behavior to develop new functions, the difficulty finding unnatural settings in which this assessment is often conducted, and the relatively high level of expertise required to execute the assessment and interpret the results (Neef and Peterson, 2007, pg. 505).

The advantages descriptive assessments have over functional analyses are that descriptive assessments include directly observing behaviors in the natural environment in which they occur and the lack of disruptions they cause to the routine of the person engaging in those behaviors. The disadvantages of descriptive assessments are that they cannot determine causality, their potential to provide misleading information, and the length of time required to complete and interpret the assessments (Neef and Peterson, 2007, pg. 507-508).

The disadvantage of indirect assessments is the lack of direct observation of the target behavior. Lack of direct observation may lead to potentially inaccurate or biased information. However, the advantages indirect assessments have over both functional analyses and descriptive assessments are the ease and simplicity of implementing the assessments, evaluating the results, and collecting data. Indirect assessments tend to be more convenient and efficient (Neef and Peterson, 2007, pg. 510).

Due to the simple, convenient, and efficient features of indirect assessments, they are widely used, particularly outside of the field of ABA. The education system utilizes teacher evaluations in the form of questionnaires to assess

teacher performance from a students' point of view. Educators utilize informant tools such as the Classroom Learning and Development Questionnaire (CLQD), which is a universal screening tool that assesses factors related to development and learning (Oberne, Hoh, and Hutchinson, 2014). In the field of social work, the Strengths and Difficulties Questionnaire (SDQ) is one of the most commonly used assessment tools for psychopathology screening with children and adolescents (He, Burstein, Schmitz, and Merikangas, 2013). Psychologists often utilize the Minnesota Multiphasic Personality Inventory (MMPI) to assist in psychological assessment and diagnosis (Silverman, 1990). Indirect assessment tools are also utilized in the criminal justice system. Risk assessment tools such as the Pretrial Assessment Tool (PAT) and the Ohio Risk Assessment System (ORAS) are often implemented to assess a variety of risk factors related to recidivism (Latessa, Lemke, Makarios, Smith, and Lowenkamp, 2010). Interviews and intake forms are widely used across practicing physicians and are a primary tool for medical diagnosis (Lichstein, 1990).

In the field of ABA, indirect assessments are typically used to gather information about the environmental variables surrounding a specific behavior. The most commonly utilized indirect assessment methods are behavioral interviews and rating scales (Austin, Carr, and Agnew, 1999). Interviews are typically the first step in most assessment processes. They involve gathering as much anecdotal information about the target behavior as possible (i.e. topography, setting, antecedents, and consequences; Kelley, LaRue, Roane, and Gadaire, 2011, pg. 183). Interviews can be delivered in a variety of formats. They can include open-ended or close-ended questions and they can be informal or structured in nature.

An example of a structured interview tool is the Functional Analysis Interview (FAI) developed by O'Neill, Horner, Albin, Storey, and Sprague, (1990). This interview tool is used to guide the interviewer in assessing the potential functions of a maladaptive behavior (Kelley et al., 2011, pg. 184). The Problem

Behavior Questionnaire (PBQ) was developed by Lewis, Scott, and Sugai (1994) and is an example of a rating scale used in ABA. One difference between an interview like the FAI and a rating scale like the PBQ is that while interviews generally consist of open-ended questions, rating scales include close-ended questions with fixed options for the interviewee (Kelley et al., 2011, pg. 186). Instead of using open-ended questions, the PBQ uses a 6-point Likert-scale format (e.g., strongly disagree, somewhat disagree, neither agree or disagree, somewhat agree, and strongly agree) to assess the variables maintaining the target behavior (Lewis et al., 1994).

One of the more common informant-based tools in ABA is the Functional Analysis Screening Tool (FAST) developed by Iwata and DeLeon (1996). The questions on the FAST are formatted to be answered with both open-ended and close-ended “yes” or “no” answers. The questions in this tool are aimed at the topography, frequency, and severity of a problem behavior along with possible antecedents and consequences that may be correlated with the presentation of a target behavior (Iwata and DeLeon, 1996).

Iwata, DeLeon, and Roscoe (2013) assessed the reliability and validity of the FAST. They assessed interrater reliability by examining mean item-by-item agreement between pairs of raters, agreement for individual items, and agreement on outcomes. Validity was assessed by comparing outcomes with results of functional analyses. Reliability was concluded to be moderate, although it was also mentioned that an acceptable level of agreement for behavioral rating scales had not yet been established. Iwata et al. (2013) suggested that higher validity may be obtained by having an expert behavior analyst with knowledge of the individual with the problem behavior answer the questions in the assessment (pg. 281). Overall, the reliability and validity of the FAST was on par with that of other indirect assessment tools (Iwata et al., 2013).

According to Koritsas and Iacono (2013), the Motivation Assessment Scale (MAS) (He and Crimmins, 1992) and the Questions about Behavioral Function (QABF) (Matson and Vollmer, 1995) are the most frequently cited functional assessment questionnaires (pg. 748). The stated purpose of the MAS is to identify the function of a target behavior based on information about the antecedents potentially occasioning the target behavior while the purpose of the QABF is to assess environmental variables that are under investigated as potential functions of the target behavior (Kelley et al., 2011, pg. 187-188). While Durand and Crimmins (1992) reported reliability and validity of the MAS and Matson, Bamburg, Cherry, and Paclawskyj (1999) reported validity of the QABF, Koritsas and Iacono (2013) reported both measures to be unreliable for assessing the function of behavior. Neef and Peterson (2007) explain that indirect assessments are not recommended as the sole means of identifying the function of a behavior. They should be used as a first step to guide a hypothesis to be tested using descriptive or experimental assessment methods (pg. 510).

Indirect assessment in the form of interviews, questionnaires, and surveys are also used in Organizational Behavior Management (OBM). OBM is a subdiscipline of ABA in which behavioral principles are applied to individuals in business, industry, government, and human service settings (Wilder, Austin, and Casella, 2009). Assessing the function of a target behavior using an FBA is described by Austin, Carr, and Agnew (1999) as “best practice” in the field of ABA while in the field of OBM the variables maintaining a performance problem are assessed and discussed less often in the literature (pg. 60). Austin et al. (1999) also mention three potential reasons as to why FBAs are not more common in the OBM literature. The reasons described are as follows: OBM research has demonstrated effective interventions without a formal FBA, most target behaviors in organizational settings are rule governed, and OBM practitioners are typically more interested in increasing the rate of a behavior and not decreasing it (pg. 64-67).

Although these may be potential reasons as to why FBAs are not used as often in OBM research, ABA research has demonstrated that interventions developed and implemented based on the results of an FBA are more likely to be effective than treatments selected outside of an FBA (Neef and Peterson, 2007, pg. 502).

OBM practitioners, as applied behavior analysts, should also be measuring variables maintaining behavior or performance before implementing interventions to change performance (Austin, 2000, pg. 343). More recently, OBM researchers have attempted to utilize FBA before implementing an intervention and have also concluded that implementing assessment-based interventions may be more effective than arbitrarily selected interventions (Bowe and Sellers, 2018; Carr, Wilder, Majdalany, Mathisen, and Strain, 2013; Ditzian, Wilder, King, Tanz, 2015; Wilder, Lipschultz, and Gehrman, 2018). In OBM, assessing variables that may contribute to performance problems is called performance analysis. Austin (2000) describes a worksheet he constructed in an attempt to develop a tool to assess performance. The product of this effort is titled the Performance Diagnostic Checklist (PDC).

The PDC is an informant-based assessment tool that has been successful in identifying variables potentially impacting performance and guiding researchers and practitioners' treatment intervention selection and design across a variety of organizations. It has also been used with a range of performance related behaviors. The PDC is administered as an interview in which the researcher or practitioner asks supervisors the questions listed on the checklist. The questions in the checklist are both open-ended and dichotomous ("yes" or "no") in nature. There are 20 questions among the four domains: (a) antecedents and information, (b) equipment and processes, (c) knowledge and skills, and (d) consequences. Upon receiving an answer from a supervisor, the researcher or practitioner typically records the answer on a copy of the PDC. The categories with the greatest number of "no" answers are considered to be the areas of focus for performance improvement.

An analysis of preintervention assessments in the *Journal of Organizational Behavior Management* (JOBM) for the years between 2000 and 2015 conducted by Wilder, Lipschultz, King, Driscoll, and Sigurdsson (2018) concluded that indirect assessment methods and tools are the most commonly used type of assessment (pg. 12). The study found that 57% of all empirical articles published between these years that included an assessment included an indirect assessment. This article also suggests that the PDC, along with Behavior Systems Analysis (BSA), makes up a large portion of the research on assessment in OBM (Wilder et al., 2018)

Research on the PDC

Pampino, Heering, Wilder, Barton, and Burson (2004) examined the effectiveness of the PDC as an assessment tool. The organization in which the tool was examined was an independently owned coffee shop. The purpose of the study was to assess the utility of the PDC in designing an intervention to increase maintenance tasks among the coffee shop employees. The specific behaviors targeted were the employees' closing tasks. The results of the PDC indicated that both a lack of antecedents and consequences were the variables potentially responsible for the lack of performance in this area. Based on the results of the PDC, an intervention consisting of task clarification, training, use of a checklist, a lottery, and public posting of the number of lottery tickets earned by each employee was implemented. Prior to implementing the intervention, baseline data were collected on the percentage of closing tasks completed each day for both baseline and intervention phases. The results of the study indicated that the PDC can be an effective assessment tool to identify areas of performance improvement.

Rodriguez, Wilder, Therrien, Wine, Miranti, Daratany, Salume, Baranovsky, and Rodriguez (2006) used the PDC to assess a similar performance problem among employees across two sites of a restaurant franchise. Employees were not offering promotional stamps to customers as often as the manager expected. The PDC results indicated a lack of antecedents and information, issues

with equipment and processes, and a lack of consequences across both sites. Data were collected on the percentage of opportunities in which stamps were offered in both baseline and treatment phases. The intervention packages, which were designed based on the results of the PDC, included a task clarification memo read at the start of the first shift and then placed in a noticeable location, a self-monitoring recording form, modification to the equipment that produced the promotional stamps, a verbally communicated goal developed by the manager and author, and graphic feedback. Following the intervention, the target behavior increased across both locations of the franchise.

Doll, Livesey, McHaffie, and Ludwig (2007) used the PDC, in addition to a PIC/NIC Analysis (Daniels and Daniels, 2004), to assess poor performance with cleaning tasks among employees at a ski shop. Five different cleaning behaviors were targeted. The results of the assessment concluded that there was a lack of antecedents and consequences surrounding the target behavior. The package intervention developed consisted of a task clarification meeting, cleaning checklist distribution, graphic feedback and daily task-specific written feedback. Prior to intervention, baseline data were collected on the completion of the five targeted cleaning tasks in addition to two non-targeted cleaning tasks. Following the intervention, all five targeted cleaning behaviors increased and the two non-targeted cleaning behaviors also increased. These results suggest that the intervention generalized to the non-targeted behaviors not listed in the task-clarification meeting and cleaning checklists.

Loughrey, Marshall, Bellizzi, and Wilder (2013) also used the PDC to identify the variables responsible for poor performance among employees in a retail setting. The retail setting in this study was a women's lingerie and clothing store and the target behavior was asking customers to enroll in the store credit card program. The results of the PDC indicated issues involving consequences, knowledge and skills, and antecedents and information. The intervention

implemented based on the results of the PDC consisted of a package intervention including video modeling, prompts (visual aids), and behavior specific verbal feedback. The percentage of credit card promotions to customers was recorded during both baseline and intervention phases. A nonconcurrent multiple baseline design across participants was used to examine the effects of the intervention. The percentage of credit card promotions increased following the implementation of the intervention across both employees in the study.

The Performance Diagnostic Checklist- Human Services (PDC-HS)

The results of these studies suggest that the PDC is a useful assessment tool for guiding intervention design and selection across a variety of organizations as well as a range of performance problems. However, although these studies demonstrated the utility of the PDC across populations and organizations, it was primarily designed for business and industry (Carr et al. 2013). Carr et al. (2013) also describe that the PDC may not be relevant to all populations and organizations. One example population is the human-service industry (i.e., employees in schools, clinics, group homes etc.). There are sections of the PDC that may not always be appropriate for assessing performance problems in these settings (e.g., the equipment and processes domain of the PDC).

Carr et al. (2013) developed a separate version of the PDC to meet the need for a performance analysis tool that best suits the human-service industry. The Performance Diagnostic Checklist – Human Services (PDC-HS) was engineered to assess the performance of employees in human-service settings, specifically those who are responsible for providing care to others. The PDC-HS assists in the identification of variables contributing to performance problems among human service employees in the same way the PDC assists in the identifying variables that may be contributing to a performance problem among employees in business and industry.

PDC-HS development consisted of a review, pilot test, and input on the wording of the questions by 11 behavior analysts (all of whom worked in a human-service setting). Like the PDC, the PDC-HS has four domains into which the 20 questions are divided. The domains of the PDC-HS include: (a) training, (b) task clarification and prompting, (c) resources, materials, and processes, (d) performance consequences, effort, and competition. Carr et al. (2013) also state that the assessment is designed to be used by a behavior analyst interviewing an employee's direct supervisor (pg. 20). The process of scoring items and interpreting the results is similar to that of the PDC in that most questions can be answered "yes" or "no" and each item scored as "no" is an opportunity for intervention. The domain with the most responses of *no* should be given the most priority. At the end of the assessment there is a list of sample interventions along with the literature to coincide (pg. 20).

Along with the development of the PDC-HS, Carr et al. (2013) evaluated the utility of the PDC-HS at a university-based autism treatment center providing Early Intensive Behavioral Intervention (EIBI) services. The employees at this location were therapists who provided one-on-one EIBI services to children with autism and had additional job responsibilities which included cleaning and arranging treatment rooms at the end of every session. The behaviors targeted for the study were the cleaning related behaviors. Upon hire, every employee was provided training on all aspects of the job including cleaning responsibilities and a checklist to describe what they were responsible for cleaning in each room. A Board Certified Behavior Analyst™ (BCBA), a co-author of the study, interviewed three supervisors using the PDC-HS. All supervisors were also Board Certified Behavior Analysts. The results of the PDC-HS indicated *training* and *performance consequences*, effort, and competition as the variables potentially responsible for the performance deficit. Data were collected on the percentage of correctly completed cleaning tasks from the cleaning checklist. The PDC-HS indicated

intervention consisted of training and graphed feedback. A concurrent multiple-baseline design across treatment rooms was used to evaluate the effects of the intervention. In addition to the PDC-HS indicated intervention phase, effects of a non-indicated intervention phase were also assessed. Assessing a non-indicated intervention in addition to the PDC-HS indicated intervention is a method of assessing the predictive validity of the tool. The non-indicated intervention consisted of task clarification and an increased availability of materials. The PDC-HS indicated intervention increased performance across participants in all treatment rooms. Performance during the non-indicated intervention phase did not increase.

Ditzian et al. (2015) also examined the utility of the PDC-HS with employees of an autism treatment center. The targeted behavior was the securing of therapy room doors. This was measured by the percentage of opportunities a therapist closed a door after passing through it. The PDC-HS was administered to three BCBA-level supervisors and the results indicated a lack of consequences as a potential maintaining variable for the performance deficit. A PDC-HS indicated intervention and a non-indicated intervention were assessed using a concurrent multiple baseline design across participants. The PDC-HS indicated intervention consisted of graphed feedback while the non-indicated intervention consisted of a prompt. The results showed that performance on this task increased under the PDC-HS indicated intervention phases while performance did not increase under the non-indicated intervention phases.

Smith and Wilder (2018) assessed the utility of the PDC-HS across a different population, setting, and performance deficit than the previously described studies. This study assessed the utility of the PDC-HS across individuals with intellectual disabilities at a privately owned and operated thrift store. This study consisted of two supervisor-supervisee dyads in which both the supervisor and employee were individuals with intellectual disabilities. The behavior targeted for this study was the task of correctly pricing clothing. Data were collected on the

percentage of tags priced correctly and independently by each employee in the dyads. Data were collected during baseline and intervention phases. The PDC-HS was completed in questionnaire format rather than the previously described interview format. Each supervisor in the dyads read and answered the question independently. The experimenter was only present to answer and clarify questions. An additional PDC-HS was completed by the store manager, an individual without intellectual disabilities, to assess the validity of the supervisor's assessment outcomes. The results of all three PDC-HS assessments indicated training as a variable responsible for the performance deficit. Based on these results, a training intervention was implemented that consisted of three steps: (a) inform, (b) model, and (c) deliver performance-based feedback. A concurrent multiple baseline design across participants was used to assess the effects of the indicated intervention. The results showed that performance on correct and independent pricing of clothing increased after implementing the PDC-HS indicated intervention across all participants.

Bowe and Sellers (2018) also assessed the utility of the PDC-HS across a different population, setting and performance deficit than the previously discussed studies. The PDC-HS was used to assess variables associated with inaccurate implementation of error-correction procedures during discrete trial training (DTT) sessions with four paraprofessionals working in special education classrooms in a preschool. Baseline data were collected on the percentage of correct error-correction steps during the first five opportunities of each session. Interviews guided by the PDC-HS were conducted with three special education teachers on the performance of the paraprofessionals with this task. The results of the PDC-HS suggested the variables associated with the performance deficit were related to training and performance consequences, effort, and competition. The PDC-HS identified an indicated and non-indicated intervention. The PDC-HS indicated intervention consisted of training on the error-correction procedure including a

mastery criterion of at least 90% correct implementation of steps. The non-indicated intervention consisted of task clarification in the form of posting the steps of the error-correction procedure and a vocal prompt from the teachers informing the paraprofessionals that the document had been posted. A concurrent multiple baseline design across participants was used to assess the PDC-HS indicated intervention and the non-indicated intervention. The results showed that the non-indicated intervention resulted in some improvement on the target behavior for half of the participants and no effect for the other half of participants. The PDC-HS indicated intervention produced great improvements across all participants.

Wilder, Lipschultz, and Gehrman (2018) evaluated all four of the domains of the PDC-HS. Prior to this study, only half of the domains included in the PDC-HS had been evaluated. To assess all domains, the study was split into two experiments across two employee performance deficits. In the first experiment the PDC-HS was used to evaluate the variables associated with infrequent teaching of verbal operants by therapists employed at a university-based clinic for children with autism. In the second experiment the PDC-HS was used to evaluate the variables associated with irregular use of a timer while conducting skill acquisition programs at the same facility. In both experiments, interviews guided by the PDC-HS were conducted with 3 BCBA supervisors.

For the first experiment, baseline data were collected on the presentation of mand opportunities per minute for Therapist 1 and the presentation of verbal-operant opportunities per minute for Therapists 2, 3, and 4. In the first experiment, the results of the PDC-HS indicated different domains for the participants. The results for Therapist 1 and 2 identified performance consequences, effort, and competition as the variable contributing to the performance deficit and graphed feedback was used as the PDC-HS indicated intervention. Results for Therapist 3 identified training as the variable contributing to the performance deficit and training was used as the PDC-HS indicated intervention. Results for Therapist 4

identified task clarification and prompting as the variable contributing to the performance deficit and task clarification was used as the PDC-HS indicated intervention. A multiple baseline design across participants with a withdrawal phase was used for Therapists 1 and 2, a multiple baseline design across verbal-operants design with an embedded withdrawal phase was used for Therapist 3, and a multiple baseline across verbal-operants design was used for Therapist 4 to assess the PDC-HS indicated and non-indicated interventions. The results of the first experiment show an increase in task performance across participants when the PDC-HS indicated intervention was in place. The non-indicated intervention for Therapists 2 and 3 did not increase task performance.

For the second experiment, baseline data were collected on the percentage of opportunities in which a MotivAider™ was used. The PDC-HS indicated intervention across two therapists identified resources, materials, and processes as the variable associated with the performance deficit. The PDC-HS indicated intervention was an increase in the availability of the MotivAider™ by placing it on the therapists' clipboards prior to the start of the session. A multiple baseline across participants design was used to assess the PDC-HS indicated intervention. The results showed an increase in the target behavior during the PDC-HS indicated intervention.

The results of these studies have demonstrated the PDC-HS to be a useful and effective assessment tool for identifying variables contributing to performance deficits. These studies have also demonstrated that the PDC-HS can be utilized across populations, settings, performance deficits, and maintaining variables. However, it is possible that a brief interview about the possible causes of performance problems may yield information similar to the PDC-HS. That is, one concern with the PDC-HS is its overall utility. It may be possible to identify the source of performance deficits by merely asking supervisors about the variables maintaining the deficit rather than conducting a formal assessment using the PDC-

HS. If these variables are able to be identified by asking simple questions, it would be more cost effective to do so. Thus, the purpose of the current study is to compare the results of the PDC-HS to the results of two informal assessment strategies (i.e., open-ended questions and structured interview questions).

Method

Participants, Setting, and Materials

Participants included 40 supervisors in varying fields of human services. Thirteen of the participants were male and 27 were female; their ages ranged from 18-54 years. The level of education of the participants ranged from those with high school diplomas or a general education diploma (GED) to those with doctorate degrees with the majority of participants (42.5%) at the master's degree level. To be considered as a supervisor participant for this study, individuals were required to meet specific criteria. The individual was required to (a) be employed in a human service setting, (b) supervise at least one other individual, and (c) have an employee with a performance problem. The range of time supervisors had been in their field was 1 to 15 years; the majority of the supervisors (32.5%) reported 4-6 years. The range of how long a supervisor had been employed with their company was 1 to 15 years; the majority of supervisors (40%) reported 1-3 years. Supervisors reported being employed in their current position from 1-15 years; the majority (50%) reported 1-3 years.

Supervisors with behavior analytic training, in terms of being a Board Certified Behavior Analyst™ (BCBA), Board Certified Assistant Behavior Analyst™ (BCaBA), or a Registered Behavior Technician™ (RBT), and those without behavior analytic training were noted as such. Fifty-five percent of participants had behavior analytic training while 45% of participants were without behavior analytic training. Fifty percent of those with behavior analytic training were BCBA's, 4.5% were BCaBA's, and 45% were RBTs.

For the purposes of this study a human service setting was considered to be an environment in which the employees were responsible for providing care to other individuals (Carr et al., 2013). The study took place in 1 public high school, 1 public middle school, 1 private pre-kindergarten through 12th grade school, 3 centers providing behavior analytic services to young children, 1 cardiology center, and 1 military medical facility. The materials that were used in the study include a clipboard with a formatted datasheet (Appendix A) and copy of the Performance Diagnostic Checklist-Human Services (PDC-HS) (Appendix B), a pen, and a cell phone with a voice recording application. The cell phone with the voice-recording application was used to record all interview sessions. The recordings were used for scoring by a second individual to assess the dependent variable, interrater agreement, and procedural integrity.

Response Measurement and Interrater Agreement

Responses provided during supervisor interviews were recorded word-for-word, and circled or marked “yes” or “no” on a formatted datasheet (Appendix A). Interrater agreement (IRA) data were collected on 32.5% of the interviews conducted. A random number generator was used to determine if the interview was assessed for interrater agreement. A second interviewer, trained on the data collection procedure, listened to the recorded interview and recorded data on a separate datasheet (Appendix C). Agreements were only scored for answers given on the open-ended question, structured question and questions answered during the PDC-HS portion of the interview. The data collected by the two interviewers was compared on a response-by-response basis. The number of responses on which both interviewers agree was divided by the total number of responses and then multiplied by 100 to obtain a percentage of agreement score. The overall mean interrater agreement was 82.69%. Broken down by question type the interrater agreement was 46.15% for the open-ended question, 100% for the structured question, 92.31% for the PDC-HS indicated result, and 92.31% for the PDC-HS

suggested treatment. Low agreement on the open-ended question is hypothesized to be due to the subjective nature of interpreting open-ended responses.

Data were collected on the accuracy of delivery of the PDC-HS portion of the interview. A data collector was provided with a copy of the PDC-HS and a formatted datasheet (Appendix D). They listened to the recorded interview and marked “yes” or “no” on the datasheet as to whether or not the portions of the PDC-HS interview were delivered properly. A percentage of correctly delivered steps was calculated; 100% of steps were delivered properly.

Design and Procedures

Participants were recruited based on the aforementioned criteria. Once participants were identified, the researcher described the study and its purpose to the individuals, provided a written description of consent to each participant, and asked each individual for signed consent to participate in the study.

Data were collected on information provided during 1 in-vivo interview with each supervisor. Interviews were conducted in about 15-minute sessions. The shortest interview was conducted in 6.92 minutes and the longest interview was 18.62 minutes. Before the interview, supervisor demographic information such as age, gender, race, marital status, education, length of employment with current organization, and length of experience in their field was gathered from each participant. The interviewer also led the participant to pinpoint the specific performance problem exhibited by the employee, then gathered data on the reason for the performance problem. The data were gathered by means of an open-ended question, a structured question, and questions answered from the PDC-HS. Prior to the start of the study, all interviewers were trained on proper implementation of the PDC-HS.

Supervisor Interview. The open-ended question was “Why do you think your employee is performing poorly with this task?”. The answer provided was audio-recorded and noted by the interviewer. The answer was placed into one of

four categories. The categories are listed below in the description of the structured question. Following the open-ended question, the interviewer asked the structured question “If you had to pick one reason of the following, which would you say is the most likely reason your employee is performing poorly with this task: training, task clarification and prompting, resources materials and processes, or performance consequences effort and competition?”. The answer given was recorded on the datasheet. After the structured question the interviewer proceeded with the PDC-HS portion of the interview. All answers were recorded on a copy of the PDC-HS. Following the delivery of the PDC-HS the interviewer listed all of the possible treatments listed on the PDC-HS and prompted the supervisor to select the treatment they thought best fit the performance deficit. The interviewee recorded the selected treatment by circling it on the PDC-HS. On two occasions a second supervisor of the same employee was also interviewed in the same format. This was done to compare results across supervisors. Results gathered from the PDC-HS were provided to the individual supervisors.

Descriptive statistics were used to compare participant responses to the open-ended questions, the structured questions, and the results indicated by the PDC-HS. The number of participants whose open-ended question response matched the responses indicated by the PDC-HS were added, divided by the total number of participants in the study, and multiplied by 100 to obtain the percentage of participants whose description was successfully interpreted to be the PDC-HS indicated reason for poor employee performance. The number of participants whose structured question response matched the responses indicated by the PDC-HS was also added, divided by the total number of participants in the study, and multiplied by 100 to obtain the percentage of participants to successfully determine the PDC-HS indicated reason for poor employee performance. A third comparison was made in terms of the number of participants whose selected treatment matched the treatment indicated by the PDC-HS. These participants were added, divided by

the total number of participants in the study, and multiplied by 100 to obtain the percentage of participants who selected the PDC-HS indicated treatment for poor employee performance. A fourth comparison was made in terms of the number of participants whose open-ended response matched the structured question response. These participants were added, divided by the total number of participants in the study, and multiplied by 100 to obtain the percentage of participants whose open-ended response was correctly interpreted to be the same as the response indicated by the structured question response.

All of these comparisons were also made for participants with and without behavior analytic training and for participants of each of the three levels of behavior analytic training.

Results

A total of forty supervisory participants were included in the study. The open-ended response corresponded with the PDC-HS results for 21 of the 40 participants. The structured question corresponded to the PDC-HS results for 20 of the 40 participants. The treatment selected corresponded to the PDC-HS suggested treatment for 10 of the 40 participants. Figure 1 depicts the percentage of participants whose open-ended question response matched the PDC-HS results, the percentage of participants whose structured question response matched the PDC-HS results, and the percentage of participants whose treatment selection matched the PDC-HS suggested treatment.

A total of 22 of the 40 participants reported having behavior analytic training and certification at the BCBA, BCaBA, or RBT level. The remaining participants did not report having behavior analytic training or certification. The open-ended response corresponded with the PDC-HS results for 9 of the 22 participants with behavior analytic training and for 11 of the 18 participants without behavior analytic training. The structured question corresponded to the PDC-HS results for 10 of the 22 participants with behavior analytic training and for

9 of the 18 participants without behavior analytic training. The treatment selected corresponded to the PDC-HS suggested treatment for 7 of the 22 participants with behavior analytic training and for 3 of the 18 participants without behavior analytic training. Figure 2 depicts the percentages of participants with and without behavior analytic training whose open-ended question response matched the PDC-HS results, the percentage of participants with and without behavior analytic training whose structured question response matched the PDC-HS results, and the percentage of participants with and without behavior analytic training whose treatment selection matched the PDC-HS suggested treatment.

A total of 11 of the 22 participants with behavior analytic training held the Board Certified Behavior Analyst certification. One of the 22 participants with behavior analytic training held the Board Certified Assistant Behavior Analyst certification. A total of 10 of the 22 participants with behavior analytic training held the Registered Behavior Technician certification. The open-ended response corresponded with the PDC-HS results for 4 of the 11 BCBA participants, for 0 of the 1 BCaBA participants, and for 5 of the 10 RBT participants. The structured question corresponded to the PDC-HS results for 6 of the 11 BCBA participants, for 0 of the 1 BCaBA participants, and for 4 of the 10 RBT participants. The treatment selected corresponded to the PDC-HS suggested treatment for 3 of the 11 BCBA participants, for 0 of the 1 BCaBA participants, and for 4 of the 10 RBT participants. Figure 3 depicts the percentages of participants at all levels of behavior analytic training whose open-ended question response matched the PDC-HS results, the percentage of participants at all levels of behavior analytic training whose structured question response matched the PDC-HS results, and the percentage of participants at all levels of behavior analytic training whose treatment selection matched the PDC-HS suggested treatment.

The open-ended response corresponded with the structured question response for 19 of the 40 participants. The open-ended response corresponded with

the structured question response for 11 of the 22 participants with behavior analytic training and for 7 of the 18 participants without behavior analytic training. Figure 4 depicts the percentage of participants whose open-ended question response matched the structured question response. The open-ended response corresponded with the structured question response for 5 of the 11 BCBA participants, for 0 of the 1 BCaBA participants, and for 6 of the 10 RBT participants. Figure 5 depicts the percentage of participants at all levels of behavior analytic training whose open-ended question response matched the structured question response.

Discussion

Forty supervisors in various fields of human services were interviewed about an employee's performance deficit/excess using three different assessment formats. These formats included an informal single open-ended question, an informal structured question with four response options, and a formal assessment utilizing the PDC-HS. Comparisons of the participants' responses were made to determine the utility of the PDC-HS as a formal assessment strategy.

The results identified that fifty-three percent of individuals who participated in the study were able to describe their reasoning of the variables associated with their employee's poor performance in such a way that it matched the PDC-HS indicated variable during an informal assessment utilizing an open-ended question format. Interestingly, participants without behavior analytic training had responses that resulted in a higher percentage (61.1%) of matches between the open-ended response and the PDC-HS indicated variable than those with behavior analytic knowledge (40.91%). Fifty percent of individuals who participated in the study were able to correctly select the PDC-HS indicated variable during an informal assessment utilizing the structured question format. Again, participants without behavior analytic training had responses that resulted in a higher percentage (50%) of matched responses to the PDC-HS indicated variable than those with behavior analytic knowledge (45.45%). Twenty-five percent of individuals who participated

in the study were able to correctly select the PDC-HS suggested treatment during an informal assessment. Almost twice the number of participants with behavior analytic training correctly selected the PDC-HS suggested treatment (31.82%) when compared to those without behavior analytic training (16.67%).

A breakdown of the results by level of behavior analytic training, in terms of certification, was also conducted. During the informal assessment utilizing an open-ended question format, 36.36% of BCBA participants were able to describe their reasoning of the variables associated with their employee's poor performance such that the interviewer adequately categorized it as the PDC-HS indicated variable. The open-ended question format resulted in 0% of BCaBA participants being able to describe their reasoning such that it adequately categorized and matched the PDC-HS indicated variable. Surprisingly, RBT participants had the highest percentage (50%) of matched open-ended response categorizations to PDC-HS indicated variables. During the structured question format in which participants were instructed to select just one domain that best fit their reasoning for their employee's poor performance, BCBA participants had the highest percentage of matches (54.55%) to the PDC-HS indicated variable followed by RBT participants (40%). No BCaBA participants were able to select the domain that matched the PDC-HS results. However, RBT participants had a higher percentage (40%) of treatment selection and PDC-HS suggested treatment matches when compared to BCBA participants (27.27%) and BCaBA participants (0%).

A comparison between the open-ended response categorization and the response indicated during the structured question format was made in an effort to describe if what was being described by the participant during the open-ended format was adequately described by the participant and correctly categorized by the interviewer. Overall the response categorized during the open-ended question format matched the structured question format response for 47.5% of all participants. The percentage was higher for those with behavior analytic training

(50%) than for those without (38.89%). When examining the various levels of behavior analytic training, the RBT participants had a higher percentage (60%) of open-ended to structured question response matches followed by BCBA participants (45.45%). Zero percent of BCaBA participants had an open-ended to structured question response match.

The results of this study suggest that the PDC-HS is a useful tool in identifying variables associated with performance problems among employees in a variety of human service settings. Regardless of their background in ABA, only about half of participants accurately identified the reason for their employee's performance problem, according to the PDC-HS. In addition, only a quarter of participants were able to select the indicated treatment. Using the PDC-HS to guide intervention selection in human service settings appears to identify variables that supervisors are not as equipped to identify without using the tool.

The results of this study emphasize the highly subjective nature of the open-ended response format. Interrater agreement (IRA) for the open-ended response was very low (46.5%) and the percentage of participants with an open-ended response categorization match to the structured interview response was only 47.5%. The difference in rating indicates that the information provided by the participants during the open-ended question was interpreted differently by separate raters, despite the fact that all raters were given the same training. The difference in the open-ended and structured question responses also suggests that the participants may have not been clear in describing their response. Alternatively, they may have misunderstood the options given during the structured question, or perhaps hearing the options given during the structured question may have led them to a different conclusion than initially described during the open-ended question.

In terms of cost effectiveness, the average interview duration was about 12 minutes. This duration included all three interview strategies. Thus, OBM practitioners should be able to obtain valuable information using the PDC-HS in a

short period of time. The PDC-HS appears to be both efficient and effective relative to the other methods assessed in this study.

Additionally, the results of the study suggest that the more closely the supervisor works with an employee the more likely it is that he or she is able to identify the PDC-HS indicated variable. Of the participants with behavior analytic training, RBT participants work most closely with their employees and have the most direct observation opportunity. RBT participants had the highest percentage of matches between the PDC-HS results and the open-ended question format. RBT participants also had the highest percentage of correct treatment selection matches to the PDC-HS suggested treatment. The increased amount of time spent directly observing the employee's performance problem may be one of the reasons RBT participants had the highest percentage of matches with these questions of the study.

The study also provided insight into the selection of performance interventions. The participants with behavior analytic training were more likely to correctly match an intervention to the PDC-HS indicated treatment. When undergoing training in behavior analysis, BCBAAs, BCaBAAs, and RBTs receive extensive education on the topics that are listed as domains in the PDC-HS. In addition, all of these individuals perform duties on a daily basis, that involve examining environmental variables and how they affect behaviors. This may not always be the case for non-behaviorally trained employees.

Although surprising, behavior analytic training did not appear to help those participants with the training to adequately describe why the employee was performing poorly when asked the open-ended question and it did not appear to help them correctly select the PDC-HS indicated domain during the structured question. In terms of the open-ended question, anecdotally, those with behavior analytic training were generally concise in their responses while they described the performance problem and while they described why they thought the employee was

performing poorly with the task. Those with behavior analytic training also used more technical jargon when stating their responses. Most participants with behavior analytic training also described responses as if they knew exactly which variable was affecting performance, whereas those without the training provided information in an apparent attempt to find the variable associated with the poor performance. The additional information provided by most of the participants without behavior analytic training may have led the interviewer toward a more accurate categorization of their reasoning.

A social validity measure was used to assess the favorability of the PDC-HS as a tool to aid in the identification of variables associated with poor employee performance. The data indicate that most participants agreed or strongly agreed that the PDC-HS was helpful, easy to follow, and that they were comfortable using it without outside assistance.

This study is not without limitations. First, although the previously mentioned interrater agreement for the open-ended question response emphasized the subjectivity of that type of assessment strategy, it is also a limitation of this study. A higher rate of agreement would have led to more reliable conclusions. Future studies should attempt to better categorize potential participant responses to the open-ended question and provide a clear list to the raters prior to interviews.

A second limitation of this study was the rule, initially implemented to control for extraneous variables, that the interviewers were not to clarify any questions on the PDC-HS. Interviewers were instructed to deliver the PDC-HS exactly as it is written. Not only was this rule implemented to control for outside influence over responses and to maintain consistency across interviews, but it was also implemented to determine if the PDC-HS was easily understood by individuals without any experience with the tool. Anecdotally, there were a few instances during various interviews in which participants asked a question or hesitated for a period of time before responding because they were trying to comprehend what the

question was asking. It is for this reason that the rule is also seen as a limitation. There could have been instances of skewed PDC-HS results because participants may not have understood the question being asked. Anecdotally, there were instances in which some participants were responding to questions on the PDC-HS in a way that did not support their initial statements provided during the open-ended response. Clarification of the questions on the PDC-HS may have prevented some misunderstandings. Future research should consider allowing clarification of terms and/or questions to ensure the most accurate PDC-HS results.

A third limitation is that only one BCaBA participated in this study. This affected the data concerning the three levels of behavior analytic training and certification. That is, it is difficult to determine if BCaBA-level training correlated with PDC-HS accuracy because too few BCaBAs were employed. Future research should include an increased and equal number of participants across the varying levels of behavior analytic training.

Finally, participants were only able to select one domain and treatment as their response to questions while the PDC-HS can indicate multiple problematic areas. If the participants were given a chance to select more than one domain there would probably have been a higher likelihood of matching the PDC-HS results. Future researchers should consider allowing supervisors the opportunity to select multiple potential treatment interventions. This would mirror real world intervention selection more closely and might increase the likelihood of matching the PDC-HS indicated treatment.

Future researchers should consider implementing an intervention based on each of the assessment strategy results, if they differ, and compare the effects on the employee's behavior. Although this could be time consuming, it would assist in determining the level of utility of the PDC-HS as a formal assessment strategy compared to other informal assessment strategies. Future researchers should also examine response differences between different levels of supervisor. Although the

current study did not assess level of supervisor, it is possible more senior supervisors would more accurately identify the source of the performance problem without using the PDC-HS.

Finally, future research should also consider assessing the utility of the PDC-HS with the employees themselves. Comparisons between responses given by the employee and responses given by the supervisors should be made. It is possible that employees may more accurately identify the source of their own performance deficits.

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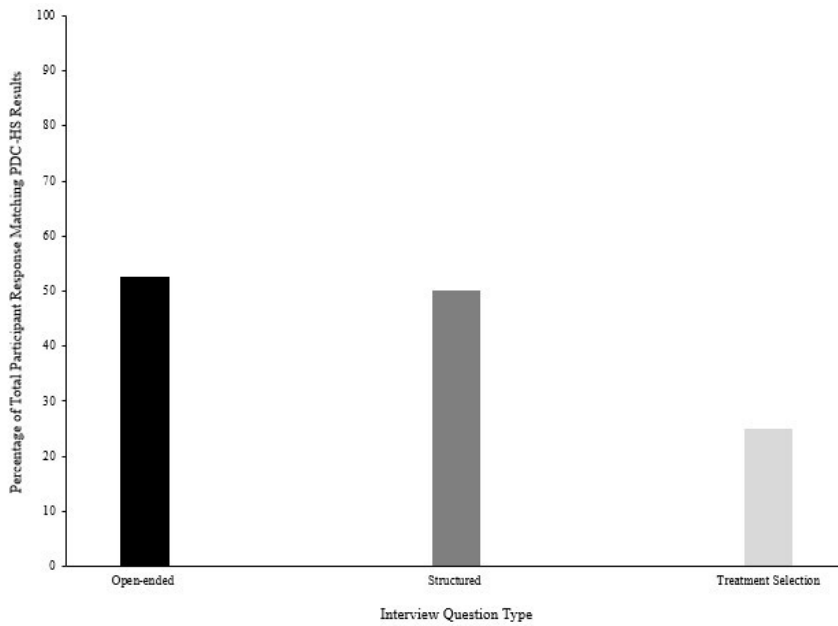


Figure 1. Percentage of Total Participant Responses and PDC-HS Result Matches.

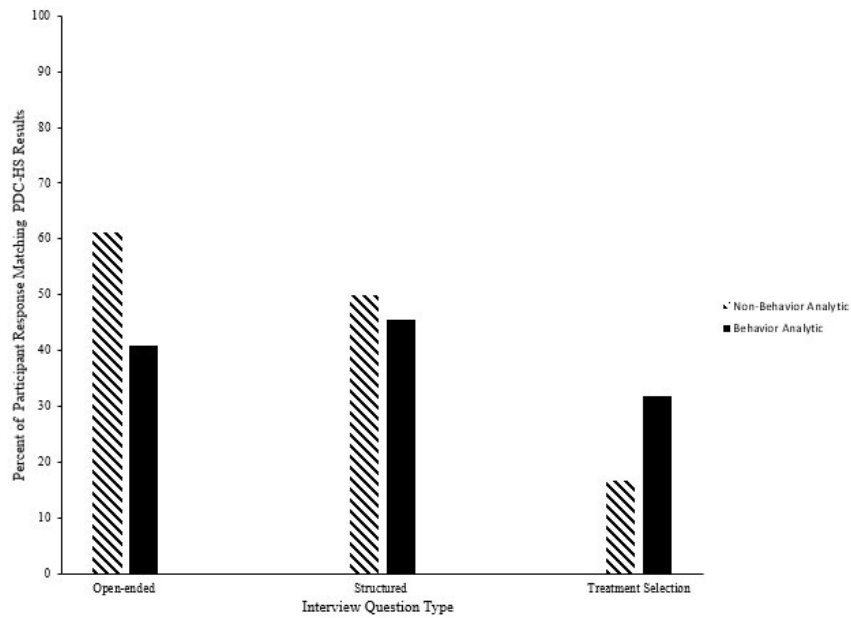


Figure 2. Percentage of Participant Responses with and without Behavior Analytic Training and PDC-HS Matches

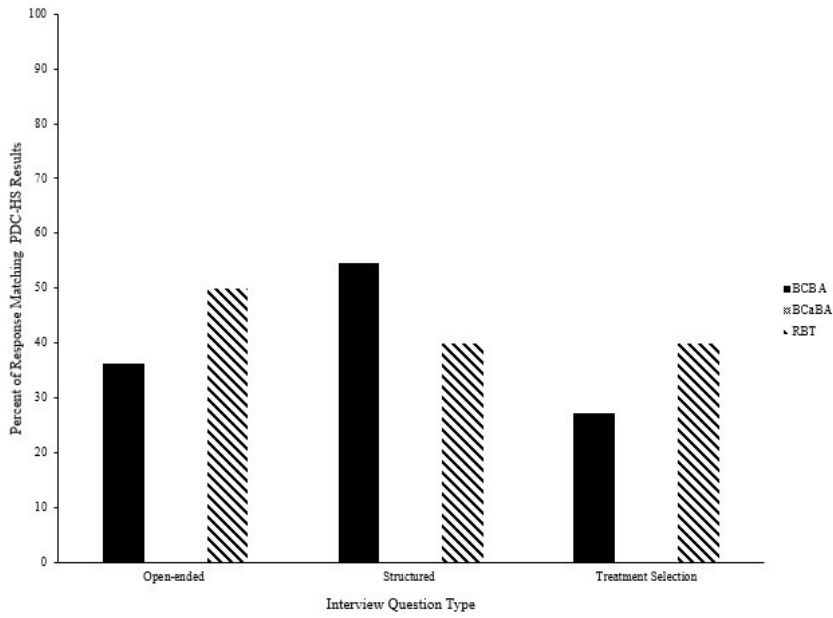


Figure 3. Percentage of Participant Responses at Different Levels of Behavior Analytic Training and PDC-HS Matches.

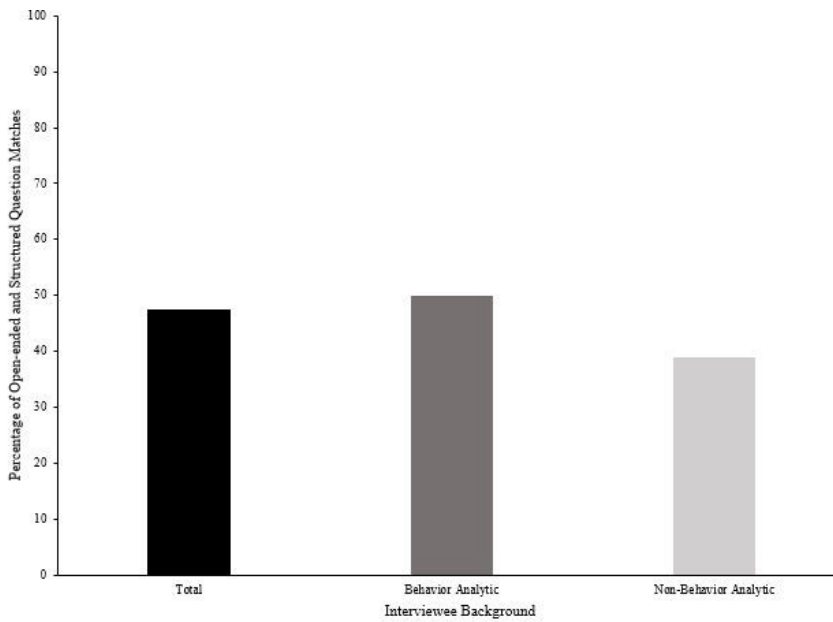


Figure 4. Percentage of Participant Open-ended and Structured Question Response Matches by Behavior Analytic Background.

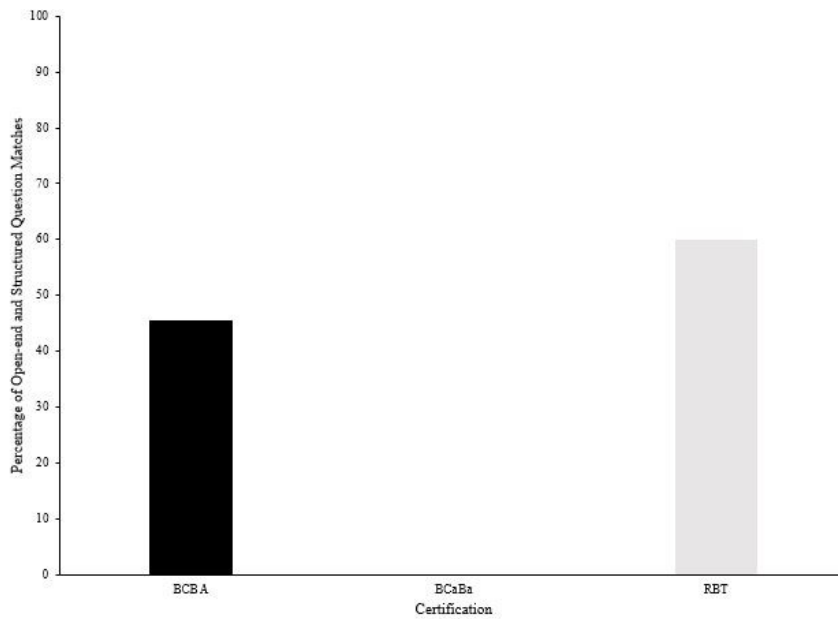


Figure 5. Percentage of Participant Open-ended and Structured Question Response Matches at Varying Levels of Behavior Analytic Training.

Appendix A
Interview Response Datasheet

Participant: _____
Date: _____
Interviewer: _____

Interview

Open-Ended Question: Why do you think your employee is performing poorly with this task?

Response (write word-for-word response):

****Response Categorization: (circle best fit) – FOR INTERVIEWER ONLY****

1. Training
2. Task clarification and prompting
3. Resources materials and processes
4. Performance consequences effort and competition

Participant: _____
Date: _____
Interviewer: _____

Structured Question:

If you had to pick one reason of the following, which would you say is the most likely reason your employee is performing poorly with this task: training, task clarification and prompting, resources materials and processes, or performance consequences effort and competition?

Response: (circle response)

1. Training
2. Task clarification and prompting
3. Resources materials and processes
4. Performance consequences effort and competition

** There should be no clarification of terms during this time.

If these questions are asked state *"For the purposes of the study I am not able to clarify terms at this time. Please select the most fitting option. At the end of the study someone can contact you with clarification if you would like."*

Circle Response

Yes

No

If Yes request email address

Email: _____

Appendix B

Performance Diagnostic Checklist – Human Services (PDC-HS)

PDC-HS

Performance Diagnostic Checklist – Human Services

Employee's Name: _____ Interviewer: _____ Date: _____

Describe Performance Concern: _____

Instructions: Answer the questions below about the employee's specific performance problem (not the employee in general). The problem should be operationalized as either a behavioral excess or deficit. Items with an asterisk (*) should be answered only after the information is verified through direct observation.

TRAINING

1	<input type="radio"/> Yes <input type="radio"/> No	Has the employee received formal training on this task? If yes, check all applicable training methods: <input type="radio"/> Instructions <input type="radio"/> Demonstration <input type="radio"/> Rehearsal
2*	<input type="radio"/> Yes <input type="radio"/> No	Can the employee accurately describe the target task and when it should be performed?*
3	<input type="radio"/> Yes <input type="radio"/> No	Is there evidence that the employee has accurately completed the task in the past?
4*	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A	If the task needs to be completed quickly, can the employee perform it at the appropriate speed?*

TASK CLARIFICATION & PROMPTING

1	<input type="radio"/> Yes <input type="radio"/> No	Has the employee been informed that he/she is expected to perform the task?
2*	<input type="radio"/> Yes <input type="radio"/> No	Can the employee state the purpose of the task?
3*	<input type="radio"/> Yes <input type="radio"/> No	Is a job aid (e.g., a checklist, data sheet) for completing the task visibly located in the task area?
4	<input type="radio"/> Yes <input type="radio"/> No	Is the employee ever verbally, textually, or electronically reminded to complete the task?
5	<input type="radio"/> Yes <input type="radio"/> No	Is the task being performed in an environment well-suited for task completion (e.g., not noisy or crowded)?

RESOURCES, MATERIALS, & PROCESSES

1	<input type="radio"/> Yes <input type="radio"/> No	Are there sufficient numbers of trained staff available in the program?
2*	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A	If materials (e.g., teaching stimuli, preferred items) are required for task completion, are they readily available (e.g., easy to find, nearby)? If no materials are required, proceed to question 5. List materials below and indicate their availability.

		Item 1: _____ Item 2: _____ Item 3: _____ Item 4: _____
3*	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A	Are the materials necessary to complete the task well designed for their intended purpose?
4*	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A	Are the materials necessary to complete the task well organized for their intended purpose?
5	<input type="radio"/> Yes <input type="radio"/> No	Can the task be completed without first completing other tasks? If not, indicate the tasks which must be completed first below. Task 1: _____ Task 2: _____ Task 3: _____ Task 4: _____
6	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A	If you answered NO for Question 5, are other employees responsible for completing any of the earlier tasks in the process? If so, indicate the employee(s) below. Task 1: _____ Task 2: _____ Task 3: _____ Task 4: _____

PERFORMANCE CONSEQUENCES, EFFORT, & COMPETITION

1	<input type="radio"/> Yes <input type="radio"/> No	Is the employee ever directly monitored by a supervisor? If so, indicate the frequency of monitoring. <input type="radio"/> hourly <input type="radio"/> daily <input type="radio"/> weekly <input type="radio"/> monthly <input type="radio"/> Other: _____
2	<input type="radio"/> Yes <input type="radio"/> No	Does the employee ever receive feedback about the performance? If yes, indicate below. By whom? _____ How often? _____ Delay from task? _____ Check all that apply: Feedback Focus: <input type="radio"/> Positive <input type="radio"/> Corrective Feedback Type: <input type="radio"/> Written <input type="radio"/> Verbal <input type="radio"/> Graphed <input type="radio"/> Other: _____
3	<input type="radio"/> Yes <input type="radio"/> No	Does the employee ever see the effects of accurate task completion? If yes, how? _____
4	<input type="radio"/> Yes <input type="radio"/> No	Is the task simple or does it involve relatively low response effort?
5	<input type="radio"/> Yes <input type="radio"/> No	Does the task generally take precedence over other potentially competing tasks? If no, indicate these competing tasks below. Task 1: _____ Task 2: _____ Task 3: _____ Task 4: _____

INTERVENTION PLANNING

Instructions: Each item scored as *NO* on the PDC-HS should be considered as an opportunity for intervention with priority given to areas in which multiple items are endorsed. Interventions may be implemented concurrently or consecutively, with the latter option being preferred for settings in which staff resources are limited. Sample interventions and illustrative literature citations for each area are provided below.

Area	Item #	Sample Intervention(s)	Literature Citations
Training	1, 2, 3, 4	Behavioral skills training (i.e., instructions, modeling, rehearsal, feedback)	<ul style="list-style-type: none"> • Barnes, Dunning, & Rehfeldt (2011) • Nabeyama & Sturmey (2010)
		Improved personnel selection	<ul style="list-style-type: none"> • Gatewood, Feild, & Barrick (2008)
Task Clarification & Prompting	1, 2	Task clarification & checklists	<ul style="list-style-type: none"> • Cunningham & Austin (2007) • Gravina, VanWagner, & Austin (2008) • Bacon, Fulton, & Malott (1982)
	3, 4	Prompts	<ul style="list-style-type: none"> • May, Austin, & Dymond (2011) • Petscher & Bailey (2006)
	5	Change/alter task location	<ul style="list-style-type: none"> • Green, Reid, Passante, & Canipe (2008)
Resources, Materials, & Processes	1	Adjust staffing	<ul style="list-style-type: none"> • Strouse, Carroll-Hernandez, Sherman, & Sheldon (2003)
	2, 3, 4	Improve access to (2), redesign (3), or reorganize (4) task materials	<ul style="list-style-type: none"> • Casella, Wilder, Neidert, Rey, Compton & Chong (2010)
	5, 6	Reassess task process and personnel	<ul style="list-style-type: none"> • Diener, McGee, & Miguel (2009) • McGee & Diener (2010)
Performance Consequences, Effort, & Competition	1	Increased supervisor presence	<ul style="list-style-type: none"> • Brackett, Reid, & Green (2007) • Mozingo, Smith, Riordan, Reiss, & Bailey (2006)
	2	Performance feedback	<ul style="list-style-type: none"> • Arco (2008) • Green, Rollyson, Passante, & Reid (2002)
	3	Regularly highlight task outcomes	<ul style="list-style-type: none"> • Methot, Williams, Cummings, & Bradshaw (1996)
	4	Reduce task effort	<ul style="list-style-type: none"> • Casella, Wilder, Neidert, Rey, Compton, & Chong (2010)
	5	Reduce aversive task properties	<ul style="list-style-type: none"> • Green, Reid, Passante, & Canipe (2008)

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Appendix C
Second Rater Datasheet

Participant: _____
Date: _____
Rater: _____

Second Rater Interview

Open-Ended Question: Why do you think your employee is performing poorly with this task?

Response (write word-for-word response):

****Response Categorization: (circle best fit) – FOR INTERVIEWER ONLY****

1. Training
2. Task clarification and prompting
3. Resources materials and processes
4. Performance consequences effort and competition

Participant: _____

Date: _____

Rater: _____

Structured Question:

If you had to pick one reason of the following, which would you say is the most likely reason your employee is performing poorly with this task: training, task clarification and prompting, resources materials and processes, or performance consequences effort and competition?

Response: (circle response)

1. Training
2. Task clarification and prompting
3. Resources materials and processes
4. Performance consequences effort and competition

** There should be no clarification of terms during this time.

If these questions are asked state *"For the purposes of the study I am not able to clarify terms at this time. Please select the most fitting option. At the end of the study someone can contact you with clarification if you would like."*

Circle Response

Yes

No

If Yes request email address

Email: _____

Appendix D
Procedural Integrity Datasheet

Participant: _____
Date: _____
Rater: _____

Procedural Integrity

Circle *yes* or *no* for all questions

1. Did the interviewer ask about the performance of concern?
 - a. Yes
 - b. No
2. Did the interviewer state the instructions?
 - a. Yes
 - b. No
3. Did the interviewer ask every question on the PDC-HS? (see copy of PDC-HS for reference)
 - a. Yes
 - b. No
4. Did the interviewer refrain from clarifying terms/questions on the PDC-HS?
 - a. Yes
 - b. No
5. Did the interviewer state all sample treatment options listed on PDC-HS for the interviewee to select from? (see copy of PDC-HS for reference)
 - a. Yes
 - b. No