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SUPERVISION BEHAVIORS OF BOARD-CERTIFIED BEHAVIOR ANALYSTS
WITH PRECERTIFICATION CANDIDATES

By

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DEDICATION

To a very special family who were the catalyst to my career in special education, the Zweroffs. I am continually amazed at Janet and Burt's selflessness and devotion to their children. In loving memory of Kyle Zweroff. He touched our lives for sixteen amazing years. He will never be forgotten.

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ABSTRACT

With the rapid increase in the rate of board-certified behavior analysts (BCBAs), there has been a need to evaluate the state of precertification supervision practices. There is no comprehensive information available on the supervision practices of BCBA/BCBAs used with precertification candidate supervisors. Current recommended supervision practices are derived from the Professional and Ethical Compliance Code (PECC) *5.0 Behavior Analyst as a Supervisor*. Leaders in the field have attempted to further define individual behaviors that support compliance with *5.0 Behavior Analyst as a Supervisor (*LeBlanc, Heinicke, & Baker, 2012; LeBlanc & Luiselli, 2016; Sellers, Alai-Rosales, & MacDonald, 2016, 2016; Sellers, Valentino, & LeBlanc, 2016, & Turner, Fischer, & Luiselli, 2016; Valentino, LeBlanc, & Sellers, 2016)*. Recommendations made by the Behavior Analyst Certification Board (BACB) regarding ongoing refinements to the supervision standards have been without published data or the use of empirical studies. The purpose of my study was to examine the supervision practices of BCBA/BCBA-D who supervise precertification candidates and to determine if there were any statistically significant differences between supervisor demographics and supervision practices. An additional correlation test (i.e., Spearman Correlation; January 2019) was conducted to evaluate for any associations between self-reported frequency of supervisor behaviors and precertification candidates BACB exam pass rate. I developed the Supervision Practices of Precertification Candidates (SPPC) survey to assess the reported occurrence

of recommended supervisor behaviors used by BCBA/BCBA-D supervisors with precertification candidates (PS). The data showed that the majority of BCBA/BCBA-D precertification candidate supervisors self-report 4 *usually* on average across all forty-six supervisor behaviors that support compliance with the PECC *5.0 Behavior Analyst as a Supervisor.* There was a varying degree of self-reported frequency in certain individual behaviors of PECC *5.0 Behavior Analyst as a Supervisor* categories ranging from 2 *rarely* to 5 *almost always.* The results of a 112 analyses of variance (ANOVAs) showed that there were thirty-five significant differences in PECC 5.0 *Behavior Analyst as a Supervisor* categories and demographics. Allotted time for supervision activities by an employer and access to multiple precertification candidates appeared to influence reported frequency of supervision practices that support compliance with *5.0 Behavior Analyst as a Supervisor.* The results of the Spearman Correlation identified seven correlations between individual supervisor behaviors and impacts on precertification candidate BACB exam pass rate. Two of these correlations offer data for the BACB forthcoming January 1, 2022 supervision restrictions for allowing newly certified behavior analysts to supervisor precertification candidates.

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CHAPTER I

INTRODUCTION

Applied behavior analysis (ABA) is a branch of psychology that uses a systematic approach to influence socially significant behavior (Cooper, Heron, & Heward, 2007). This systematic approach involves the identification of a reliable relationship between a behavior and the environmental variables that directly precede, antecedents, and follow it, consequences (Baer, Wolf, & Risley, 1968). This functional relationship between antecedents and consequences has been investigated in empirical studies (See *The Journal of Applied Behavior Analysis,* 1968 - present). This vast and growing literature base describes the efficacy of applied procedures (e.g., Miltenberger, 2008.) These applied procedures include numerous instructional approaches such as functional behavioral assessment, functional communication training, and discrete trial instruction (Carr, 1977; Sasso et al. 1992; Wolery & Gast, 1984; Wolery & Hemeter, 2011). The body of literature supporting the efficacy of these approaches has been a key variable driving increases in consumer demand for effective interventions (Hartley, et al., 2016).

To address this growing consumer demand, a professional credential called the board-certified behavior analyst has developed. The field of ABA now has professional practitioners that are governed through the Behavior Analyst Certification Board® (BACB®) that incorporated in 1998 (Johnston, Carr, & Mellichamp, 2017). The BACB provides three levels of certification for degreed candidates. These certifications are: board certified behavior analyst-doctoral ™ (BCBA-D™), board certified behavior

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analyst® (BCBA®), and board-certified assistant behavior analyst® (BCaBA®). These certifications are intended to set forth minimum competencies and experience requirements in order to take an examination that leads to certification (BACB, 2017).

The BACB approves candidates through a verification system that includes a review of approved course work in behavior analysis, a degree from an accredited institution, and fieldwork experiences. Though this verification process, precertification candidate eligibility is determined. If deemed to meet eligibility, the precertification candidate is able to take the BACB certification exam (BACB, n.d.). Once a candidate passes the certification exam, she is able to call herself a board-certified behavior analyst or a board-certified assistant behavior analyst. She may deliver applied behavior analytic services to consumers commensurate with precertification experiences while using the appropriate designated title (i.e., BCBA-D, BCBA, or BCaBA). The designation of a professional credentialing board has been the first step into shaping the professional field of applied behavior analysis.

Background of the Problem

The progressive growth rate of the professional field of applied behavior analysis has quickly catapulted from infancy to an emerging adolescent (Burning Glass Technologies, 2015). This growth rate as well as growing demand for services has created the need to ensure quality oversight of future generations of professional behavior analysts. Creating mechanisms for quality oversight has been a systematic process that includes meeting requirements set forth by the National Commission for Certifying Agencies (Carr & Nosik, 2017).

The National Commission for Certifying Agencies requires that a given profession conduct routine job analysis. The job analysis is a dynamic process that verifies the minimum job competencies of a professional behavior analyst practitioner. Historically, these changes occur every five to ten years in a profession. The results of a job analysis can be two-fold: (1) verify current standards are still reflective of the minimum professional competencies and (2) modify or remove competencies that are no longer validated to meet the minimum professional competencies (American National Standards Institute, 2016; Institute for Credentialing Excellence, 2016). In relation to professional behavior analysts, the outcome of this process is to inform the BACB board of any recommended changes to the BACB Task List (2014), Further, changes to the task list will inform any required modifications to coursework and fieldwork experiences. The BACB will release changes to the task list several years in advance to allow institutions time to prepare curriculum and concurrently allow other systems to make organizational changes to meet updated BACB standards (Johnston, Mellichamp, Shook, & Carr, 2014).

In the upcoming fifth BACB Task List edition, there has been an increasing shift and attention towards the behavior analyst as a supervisor (BACB, 2012; BACB, 2017). These updates to the task list reflect that minimum job competencies have evolved to include supervisory responsibilities. Despite the recent shift in the task list, there is very little research and published information specific to board certified behavior analysts as supervisors (LeBlanc & Luiselli, 2016).

Behavior Analyst Certification Board® Supervision

BACB supervision is a process that occurs through several aspects of a professional behavior analyst practitioner's responsibilities. These responsibilities include the relationships the professional behavior analyst practitioner has relative to the different roles she may take on throughout her career. These relationships include: (1) a supervisor to a precertification candidate, (2) a supervisor to a BCaBA or a registered behavior technician (RBT), and (3) a supervisor to other non-certified stakeholders providing direct clinical care to a consumer (BACB, 2017). Each of these relationships falls under the broad scope of the professional and ethical compliance code (PECC) 5.0 *the behavior analyst as a supervisor* (BACB, 2014). Given the rapid growth of the field, it is reasonable to suggest that the most critical supervision relationship is with a precertification candidate (Turner, Fischer, & Luiselli, 2016).

The BACB requires a certain amount of precertification fieldwork hours to be completed by the precertification candidate while under the supervision of a responsible supervising BCBA/ BCBA-D certificant. The supervising BCBA/BCBA-D supervisor is ethically and professionally responsible for the precertification candidate's fieldwork. This includes providing opportunities for the precertification candidate to practice application of the competencies on the task list (BACB, 2014). The outcome goal of this supervision relationship is to prepare the precertification candidate to apply minimum competencies with consumers in the applied setting (Sellers, Alai-Rosales, & MacDonald, 2016).

While there are some clear logistical parameters (e.g., number of fieldwork hours required, frequency of contact) that outline the BACB requirements of the precertification

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process, there are fewer explicit parameters in relation to the process and substance of the supervision process (BACB, n.d.). For example, the BACB does not currently prescribe a standardized supervision curriculum nor does it detail out comprehensive supervisor behaviors that should be used with the precertification candidate (BACB, 2012). Further, there is little peer reviewed research or professional literature written for professional behavior analysts that discusses the supervision of precertification candidates (Sellers, Valentino, & LeBlanc, 2016). It is the individual responsibility of each BCBA/ BCBA-D to stay current with emerging literature. However, given the lack of supervisor competencies in previous task lists coupled with the lack of peer-reviewed research, poses a significant challenge to the individual BCBA/BCBA-Ds to know how she would improve individual supervisor behaviors with a precertification candidate (Shook, Johnston, & Mellichamp, 2004).

Behavior Analyst Certification Board® Supervision Preparation

BCBA / BCBA-D supervision requirements have slowly evolved since 1998. In response to the evolving supervision requirements, the BACB has made revisions to the precertification supervision policy (BACB, 2012). These changes in precertification policy include a qualifying BCBA/BCBA-D meet the following: (a) completion of a qualifying BACB supervisor 8-hour continuing education credits (CEUs) on supervision and (b) ongoing supervision CEUs during the supervisor's certification cycle (BACB, 2012; BACB, 2017). While these changes have not always occurred as part of systematic job analysis cycles, they have occurred as the field has seen substantial growth in certificants (Sellers, Valentino, & LeBlanc, 2016).

Systematic changes in the BACB supervision requirements are one part of a comprehensive process to refine the supervision of precertification candidates. Along with these additional BACB requirements, it is necessary to continue to fine tune the subset of behaviors that are necessary for a BCBA / BCBA-D supervisor to use with a precertification candidate (LeBlanc & Luiselli, 2016). These combined efforts will work simultaneously to prepare current BCBA/ BCBA-D to provide high quality supervision to aspiring behavior analysts.

Sustaining the demand for services require future generations of behavior analysts to receive well-rounded training that aligns with the BACB Task List. This training needs to include explicit instruction on how to conduct supervision of precertification candidates (LeBlanc & Luiselli, 2016). The upcoming fifth task list edition will benefit the supervision training of future professional behavior analyst practitioners. However, the preparation of precertification candidates lies in the hands of a generation of BCBA/BCBA-Ds supervisors that did not receive explicit training in supervision (DiGennaro Reed & Henley, 2015). Therefore, it is unclear how current BCBA / BCBA-D supervisors are delivering supervision to precertification candidates.

<center>**Problem Statement**</center>

The lack of supervisor preparation in current generations of qualified supervisors is problematic for a rapidly growing field. BCBA/ BCBA-D supervisors of precertification candidates are responsible for ensuring candidates can demonstrate minimum competencies with consumers. The lack of research on how current supervisors are performing or delivering precertification supervision relative to the PECC and 4th edition BACB Task List is also equally disconcerting due to the potential for negative

impact to consumers of behavior analytic services (LeBlanc & Luiselli, 2016). By understanding what supervisor behaviors are being used with precertification candidates, stakeholders will better understand the impact of supervision preparation on the outcomes of precertification candidates, BCBA / BCBA-D supervisors will have data to develop and adjust supervision repertoires, and accredited institutions will be better informed during the curriculum development process.

Significance

The quality of the service delivery system ultimately hinges on the preparation and training of precertification candidates. Thus, BCBA/ BCBA-D supervisors are tasked with a significant responsibility to prepare competent professional behavior analyst practitioners. It is estimated that most BCBA/BCBA-D supervisors have not directly benefited from explicit instruction in supervision and preparation of precertification candidates (Di-Gennaro Reed & Henley, 2015). Due to the lack of explicit supervision preparation training, the BCBA/ BCBA-D supervisor may not have the resources or skill sets required to deliver supervision (LeBlanc & Luiselli, 2016).

Beyond possessing supervision skill sets, the BCBA/ BCBA-D also invests a significant involvement of time and resources during the precertification supervision process. Given the current estimated demands for behavior analytic services, it is probable that most BCBA/ BCBA-D supervisors have several work responsibilities beyond the precertification candidate (Hartley et al., 2016). Therefore, it is essential to consider the investment of time and resources of both the supervisee and supervisor when providing supervision. Ineffective or inefficient supervision behaviors may hinder the professional development of the precertification candidate (Sellers, Alai-Rosales, and

MacDonald, 2016). Thus, leading to a precertification candidate who is not prepared to deliver effective behavior analytic services.

Handling the consequences of ineffective supervision ultimately requires more resources of the service delivery system. These consequences could include a precertification candidate who does not meet requirements to demonstrate competency the BACB certification examination or a newly certified behavior analyst that engages in unprofessional or unethical behavior with a consumer (Sellers, Alai-Rosales, & MacDonald, 2016). Therefore, it is critical that the supervision of precertification candidates results in the mastery of minimum competencies on the BACB Task List.

This study addresses concerns by considering the current state of supervision repertories of BCBA/ BCBA-D supervisors relative to the PECC 5.0 while also evaluating for supervisor variables that may indicate positive outcomes for the precertification candidate. The study will allow precertification candidates, BCBA/ BCBA-D supervisors, and key stakeholders to consider the critical minimum supervisor competencies required in the precertification supervisory relationship.

Research Questions

To further explore the supervision repertoires of board-certified behavior analysts with precertification candidates, the following questions were addressed:

1. How often are supervisors reporting use of recommended supervisory behaviors with precertification candidates?

2. Are there significant differences between the means of participant responses for PECC *5.0 Behavior Analyst as a Supervisor* and Miscellaneous category?

3. Are there significant differences between the means of participant responses for PECC *5.0 Behavior Analyst as a Supervisor* and Miscellaneous category relative to supervisor demographics?

4. Are there any correlations in certification outcomes related to supervisors reported individual supervision behaviors?

CHAPTER II

LITERATURE REVIEW

Aspiring professionals impact the overall field of applied behavior analysis (ABA) and the quality of behavior analytic services delivered to consumers. In order to protect the integrity of the field, behavior analysis requires supervision of these future professionals. Therefore, it is essential to facilitate a comprehensive understanding of how to deliver supervision that produces ethical and effective future generations of behavior analysts.

In order to understand the significance of accomplishing this outcome, it is paramount to assess and evaluate the development and current state of the professional preparation of behavior analysis. I will accomplish this assessment and evaluation by beginning with a brief review of the history of ABA and creation of the Behavior Analyst Certification Board (BACB). Throughout this systematic discussion it becomes obvious that there is a need to disseminate

Development of ABA

As the field of ABA developed in the 1960's, researchers began to apply methods of experimental analysis of behavior to determine if principles of behavior demonstrated in laboratory settings with nonhumans could be replicated with humans in naturalistic settings (See the Journal of Experimental Analysis of Behavior). The experimental analysis of behavior (EAB) goal is to study behavior (Rider, 1991). The results of this experimental research confirmed the wide range of application across organisms

(Skinner, 1953). The growing number of researchers working with humans in the applied setting spawned the development of contemporary ABA (Wolf, 1993). Applied behavior analysis (ABA) is the branch of psychology that focuses on the observable and functional relationship of socially-significant behavior with the environment (Cooper, Heron, & Heward, 2007). A functional relationship refers to a change in one variable reliably causing a change in another variable. This functional relationship exists in a three-term contingency: (1) antecedent, (2) behavior, and (3) consequence. An antecedent is an event that immediately precedes and sets the occasion for an observable behavior to occur and a consequence is an event that follows the observable behavior and influences the likelihood of its future occurrence (Skinner, 1938; 1953). The systematic observation of human behavior through the antecedent-behavior-consequence contingency is the cornerstone of ABA (Cooper, Heron, & Heward, 1988, 2007; Sulzer, Alzaroff, &Mayer, 2013).

Two significant events in 1968 marked the formal beginning of contemporary ABA These events were: 1) the publication of the *Journal of Applied Behavior Analysis* (JABA) began, and 2) the publication of "Some Current Dimensions of Applied Behavior Analysis" by Baer, Wolf, and Risley (Baer, Wolf, & Risley, 1968). Initial discussions lead by B.F. Skinner and Nathan Azrin paved the way for the development of this journal. JABA provided scientists a venue to publish work that expanded application of operant conditioning into work with humans (Wolf, 1993; Morris, Smith, & Altus, 2005; Procter & Weeks, 2012). In its current format, JABA is a quarterly peer-reviewed academic journal that publishes empirical research related to applied behavior analysis.

JABA's first issue contained the seminal article "Some Current Dimensions of Applied Behavior Analysis". This article conceptualized the seven dimensions of ABA. Baer, Wolf, and Risley (1968) outline the following seven characteristics of ABA: (1) socially significant behavior (2) objectively measures behavior (3) analytic (4) technological with clear and detailed descriptions (5) conceptually systematic and grounded in behavioral principles (6) effective and produces useful effects and (7) generality with methods that work in different environments. Over the course of its history, these seven dimensions have guided professionals in developing innovative procedures and techniques (Ardila, 2001). See table 2.1 for additional description.

Table 2.1. *Seven Dimensions of ABA*

Dimension	Description
Applied	Applied interventions focus on behavior change that is meaningful/socially important to the individual.
Behavioral	ABA focuses on measurable behavior that can be clearly defined and observed.
Analytic	Data is required to demonstrate that applied intervention correlate with functional behavior change.
Technological	Targeted behaviors are described specifically, and procedures are outlines in detail so that they can be implemented in the same way by different people.
Conceptually systematic	Strategies and interventions are research-based and emphasize the principles of behavior.
Generality	Learned behaviors can be demonstrated in different settings and under a variety of contexts and maintained over time.
Effective	Interventions are monitored to ensure strategy of effectiveness

Behavior Analyst Practitioners

Behavior analyst practitioners provide direct application of ABA principles to a diverse consumer base (BACB, n.d.). These applications include applied clinical problems, industrial and organizational management, community behavior analysis, sport psychology, violence, racism, productivity, drug abuse, and other social problems (Barnes-Holmes & McEnteggart, 2015). Examples of these applications include, school wide positive behavior supports, organizational behavior management (OBM), and environment and sustainability (Sugai et al, 2000; Daniels & Bailey, 2014; Rodriguez, Sundberg, & Biagi, 2017; Lehman & Geller, 2004). There is a strong trend across different work settings and consumer populations for ABA services, which increases the need for trained behavior analyst practitioners. With this increase comes an ethical obligation to ensure integrity with service delivery. Such issues, common and comparable to other developing disciplines, surround how to identify and ensure the quality of behavior analytic services (Shook & Favell, 2008).

Behavior Analyst Certification Board®

The development of the BACB was precipitated by efforts in Florida and Minnesota to certify individuals in behavior analysis positions (Johnston et al., 2014). In the 1970's, both of these states introduced certifications outlining minimum competencies to provide services as a behavior analyst (Sulzer-Azaroff, Thaw, & Thomas, 1975). While the Minnesota certification program was short-lived, it was an important first step in the growing profession (Shook, Johnston, Cone, Thomas, & Greer, 1988). Seminal efforts lead by Dr. Jon Bailey through the Florida program developed into what later became known as the Florida Behavior Analysis Certification Program

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(Johnston & Shook, 1987). The Florida Behavior Analysis Certification Program involved degree, coursework, supervision, and passing a psychometrically sound examination. The growing success of the Florida Behavior Analysis Certification Program prompted California, Texas, Pennsylvania, New York, and Oklahoma to follow suit. Through statutory revisions, Florida was able to share the certification examination with these states (Johnston, Carr, & Mellichamp, 2017).

Between 1984 and 1990, Dr. Gerald Shook was the executive director of the Florida Behavior Analysis Certification Program (Iwata, Sundberg, & Carr, 2011). Dr. Shook was motivated by seeing certification positively impact the quality of service delivery to consumers. Over the course of a decade, Dr. Shook met with countless numbers of professionals to develop, coordinate, and implement the execution of a national certification board (Shook, Hartsfield, & Hemingway, 1995). This work entailed a comprehensive job analysis that consisted of convening subject matter experts (SME) to identify basic job duties of the profession (Johnston et al., 2014). This job analysis lead to the development of a task list of competencies covering the areas of basic principles, applications, consultation, and ethics (Iwata, Sundberg & Carr, 2011; Shook, Hartsfield, & Hemmingway, 1995; Shook, Johnston, & Mellichamp, 2004,). As a result of his persistence, the BACB was officially created on May 5, 1998 to meet the professional credentialing needs of behavior analysts, governments, and consumers of behavior analysis services (Carr & Nosik, 2017). The mission of the BACB is to protect consumers of behavior analysis services worldwide by systematically establishing, promoting, and disseminating professional standards (BACB, n.d.).

The BACB is an international certification that provides consumers with a basic credential that identifies a qualified behavior analysis practitioner. The BACB certification outlines (a) specific degree (b) coursework and (c) experience requirements that must be met to take the BACB exam. Since its inception, the BACB has gone through several iterations in order to systematically make improvements in the certification standards (Shook, Johnston, & Mellichamp, 2004). The goal of these systematic revisions is to promote improvements and sustainable growth of board-certified behavior analysts while also allowing stakeholders (e.g., universities, fieldwork supervisors, and human service agencies) time to plan and prepare to meet changes in standards.

The first and second edition task list were collectively under the Florida Behavior Analysis Certification Program. The task list represents knowledge, skills, and abilities of an entry level behavior analyst (BACB, n.d.). The BACB® officially took over the task list in the third edition (J. Carr personal communication, March 26, 2018). Table 2.2 through 2.4 provide a summary of all BACB iterations by describing the qualifying conditions to apply for the BACB certification examination. As of 2018, the BACB offers certification for behavior analysts across three degreed level credentials. These credentials are the Board-Certified Behavior Analyst-D™(BCBA-D ™), Board Certified Behavior Analyst® (BCBA®), and Board-Certified Assistant Behavior Analyst® (BCaBA®).

Table 2.2. *Requirements during Third Edition BACB® Task List 2005 (First edition through the BACB)*

BACB Credential	Degree	Coursework hours	Experience hours
BCBA	Master's degree	225	1500
BCaBA	Bachelor's degree	135	1000

Table 2.3. *Requirements during Fourth Edition BACB® Task List 2015 (Second edition through BACB)*

BACB Credential	Degree	Coursework hours	Experience hours
BCBA-D	Ph-D behavior analysis, education, psychology	270	1500
BCBA	Master's behavior analysis, education, psychology	270	1500
BCaBA	Bachelor's behavior analysis, education, psychology	180	1000

Table 2.4. *Requirements during Fifth Edition BACB® Task List 2022 (Third edition through BACB)*

BACB Credential	Degree	Coursework hours	Experience hours
BCBA-D	Ph-D behavior analysis, education, psychology	315	2000
BCBA	Master's behavior analysis, education, psychology	315	2000
BCaBA	Bachelor's behavior analysis, education, psychology	225	1300

The BACB continues to conduct systematic changes in eligibility requirements to reflect the developing state of professional behavior analysis practice. The changes in coursework hours, narrowed degree scope, and increase in fieldwork hours indicates we are still working towards achieving a steady state (Carr, 2016). The addition of a

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freestanding 45-hour ethics course reflects that through the outcome of the systematic job analysis evaluations, behavior analysts need more training in how to handle applied ethical and professional issues. These changes are geared towards preparing the fast-growing field of behavior analysts. (Carr, 2018)

There is an exponential growth of BCBAs over the last two decades (Deochand & Fuqua, 2016). Table 2.5 provides a summary of this growth rate. In 2015, a report estimated 75,000 BCBAs are needed to support the increased need for behavior analytic services (Carr, 2016). Some of this growth is due to the passage of autism insurance reform laws and ABA licensure laws (Deochand & Fuqua, 2016). In a report completed by Burning Glass Technologies (2015), autism is the most commonly requested skill of certified behavior analysts in the top three major industries of healthcare, education, and social assistance (BACB®, 2015 Retrieved from BACB® website). It is clear that data from the BACB reflects the increasing demand for certified behavior analysts across other areas such as pediatric behavior disorders, traumatic brain injury, and mental health disorders (Carr & Nosik, 2017; Hartley et al., 2016). Given the demand for behavior analytic services, there is an urgent need to consider supervision and preparation of aspiring behavior analysts. The role of supervision for precertification candidates is critical to the delivery of high-quality behavior analytic services to consumers (Carr, 2018).

Table 2.5. *Growth of BACB® Certificants*

BACB Credential	1999	2009	2018
BCBA/ BCBA-D	28	5731	28017
BCaBA	2	1787	2958

Shift Towards Supervision

Supervision is the primary means used to teach skills required in a given profession (Storm & Todd, 1997). The supervision process broadly entails the supervisor overseeing the work of a supervisee (Tyler & Tyler, 1997). The supervisory relationship entails a competent professional that serves the role of the supervisor to an untrained aspiring professional, the supervisee (LeBlanc & Luiselli, 2016). Through this process, the supervisee acquires and demonstrates competencies within a given profession (Watkins, 2012). Competency-based supervision refers to establishing a pre-determined mastery criterion for each behavior or task that a supervisee must met (Parsons et al., 2012). The necessity of competency-based supervision in the development of aspiring professionals is documented as a necessity to safeguard the integrity of a profession. (Falender & Shafranske, 2012; Hulse & Robert, 2014; Milne & Reiser, 2012).

Despite the documented importance of competency-based supervision, the field of ABA has a limited amount of literature describing the procedures used in the supervision of aspiring behavior analysts, including outcomes of professionals who receive competency-based supervision versus those who receive non-competency-based supervision (LeBlanc & Luiselli, 2016). The growing number of behavior analysts relative to this bare supervision literature becomes problematic given the growth

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predictions. In 2014, BACB certification predictions in the USA indicate a growth of up to 42,000-60,000 certified behavior analysts (Deochand & Fuqua, 2016). As of 2018, the BACB has approximately 30,000 certificants (BACB, n.d.). Therefore, it is critical to provide clear guidance on what constitutes effective supervision of aspiring behavior analysts.

Current State of Supervision

In response to the rapid growth and need to maintain the quality of services, the BACB has implemented ongoing refinements to the BACB supervision requirements. These refinements have occurred separate of scheduled task list changes. There is no published data by the BACB that we were able to locate on the particular rationale for ongoing refinements in supervision policy by the BACB (e.g., number of ethical complaints, number of requests made by supervisors). However, on April 10, 2018, Dr. Jim Carr, in the 'Behavioral Observations' podcast discusses that the most frequently reported ethical complaint submitted to the BACB relates to supervision of precertification candidates (Carr, 2018). Although published objective information is unavailable from the BACB to substantiate the revisions to the supervision policy, other research is available that provides snapshots of supervisory practices and supervisory training in the field of applied behavior analysis.

Shook et al. (2004), published a report describing procedures and findings of a job analysis study conducted by the BACB. The job analysis collected opinions used to determine essential content for behavior analysts. In the findings, respondents were asked about supervisory issues. Responses to supervision questions revealed 66% of BACB certified respondents indicated that they supervised others who provide behavior analytic

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services. Of the BCaBA respondents, 65% reported delivering behavior analytic services under supervision. Of these BCaBAs that received supervision, 82% reported it was under the supervision of a BCBA. As the authors noted, this was encouraging that a majority of the BCaBAs sought supervision with a BCBA, but there were still a percentage that did not receive any supervision.

In a survey completed by DiGennaro-Reed & Henley (2015), descriptive data on supervisory training was collected on BACB certificants. The survey collected information on the various types of staff and supervisory training and performance management procedures in applied settings. The supervision relationship described in the article entails supervision of precertification candidates as well as supervisor-subordinate relationships (e.g., BCBA and paraprofessionals). The BCBA respondents indicated 66% had not had training on effective supervision practices. In addition, of the BCBA respondents that did receive training on effective supervision practices, 46% of the BCBA respondents reported that the supervisory training received was somewhat or not at all helpful in preparing them to supervise others. In the discussion section, the authors suggest supervisors would benefit from more frequent feedback from their supervisors in adherence to best practice supervision procedures.

In Shepley et al. (2017), a systematic review of college and university programs approved by BACB examined how consultation is taught in behavior analyst preparation programs. The authors are interested in determining how many behavior analysts are taught to provide consultation as part of a behavior analytic service delivery model. While the article does not explicitly focus on the inclusion of supervision practices within behavior analysis programs, it does provide useful information on the state of supervision

within graduate programs. Of the 187 programs reviewed, 49% (n= 91 programs) included a supervision provision. This data provides additional information on the current state of supervision preparation within coursework.

The ABAI special section article on supervision practices by Linda LeBlanc and James Luiselli (2016), suggests that many behavior analysts receive little or no explicit instruction and mentoring in supervision practices. It is unclear what data was used to make this observation (e.g., BACB Task List content requirements, approved course sequence curriculum content evaluation). In any regard, DiGennaro-Reed and Henley (2015) study and Shepley et. al (2017) offer support to this observation by LeBlanc and Luiselli (2016). As part of the evolving job competencies, most behavior analysts in applied settings will minimally be expected to provide supervision to registered behavior technicians (RBTs) as part of tiered service delivery in the treatment of autism spectrum disorders (Dixon et. al, 2016).

The growing number of behavior analysts precipitates a need for highly qualified supervisors to meet the demands of the increasing population of supervisees. This lack of data on supervision procedures reflects the current state in which there is room to make systematic improvements within the supervision system. This lack of data may provide the basis for the expressed urgency in developing strong supervisory repertories for professionals overseeing the supervision of aspiring behavior analysts.

BACB® Supervision Standards

The BACB has implemented systematic changes in supervision standards throughout the last several years. Supervision standard changes are historically released in quarterly newsletters (BACB® Newsletter, 2012, BACB® Newsletter, December

2014; BACB® Newsletter, October 2017). These changes relate to a variety of supervision relationships within the BACB framework. Revisions made to existing supervision standards are reported to be a result of several variables including: (a) ambiguities in current policy (b) US state regulatory authorities and third-party payors scrutinizing practice of BCaBAs (c) supervisors were increasingly identified in complaints against the BCaBA practices (e) BCaBAs were requesting supervision requirements that reflected their practice (f) rapid growth of the behavior analyst workforce (g) recent increases in rigor of other BACB standards (h) SME experiences with recent graduates of behavior analysis and (i) consumer appeals for more rigorous standards (BACB® Newsletter, 2012, BACB® Newsletter, December 2014; BACB® Newsletter, October 2017). These revisions are described below.

In March 2012, the BACB assembled a task force consisting of 8 subject matter experts (SME). The task force identified the following requirements in order to supervise a precertification candidate: (a) pass an 8-hour post-certification, competency-based, BACB approved training module/workshop on supervising precertification individuals; (b) pass an online, competency-based training module on BACB experience standards at www.bacb.com and (c) obtain 3 hours of continuing education related to supervision during each certification cycle. These requirements were phased in over a 2-year time frame with a deadline for compliance of December 31, 2014 (BACB® Newsletter, 2012).

In 2013, 10 SME met to review the BCaBA supervision standards. The SME workgroup used supervision standards from other disciplines such as physical therapy and speech-language therapy. A number of changes were made to the current BCaBA supervision policy. These changes included: (a) explicit supervisory responsibility over

the BCaBA's services, (b) an allocation of the amount of supervision based on practice hours, (c) increased supervision for new BCaBAs, (d) elimination of the physical-presence observation requirement, and (e) publication of the supervisor's name in the BCaBA's record in the BACB Certificant Registry. These changes went into effect on January 1, 2017 (BACB® Newsletter, 2014).

In February 2017, the BACB assembled a panel of 12 SME to conduct a periodic review for possible revisions to the BCBA and BCaBA experience standards. It should be noted that this is a requirement of the National Commission of Certifying Agencies (BACB® Newsletter, October 2017). The following changes were approved by the BACB Board of Directors: (a) elimination of practicum and intensive practicum options (b) introduction of two categories of supervised fieldwork available in all settings (c) increased fieldwork hours requirements (d) revised supervisory period duration (e) increased supervisory contact requirements (f) revised distribution of restricted and unrestricted activities and (g) BCBAs within their first year of practice are restricted from doing precertification supervision unless they are supervised monthly by a BCBA who has at least 5 years post certification experience. These changes go into effect on January 1, 2022 (BACB® Newsletter, October 2017).

In March 2018, the BACB announced early implementation of the monthly supervisory period, January 1, 2022 supervision changes. This early implementation is due to reports of stakeholder support for conversion to the monthly supervisory periods for fieldwork candidates (BACB® Newsletter, March 2018). Therefore, the BACB will require all supervisors overseeing the fieldwork of precertification candidates to comply with the monthly experience system beginning January 1, 2019. We did ask for data from

the BACB to support early implementation. The following response was sent by a BACB customer service representative "we received overwhelming response" (Personal Communication, BACB customer service representative). In addition to the early implementation of the monthly supervisory period, the completion of the BACB experience training modules is no longer required effective immediately (BACB® Newsletter, March 2018). There is no clear objective data that is published by the BACB on what prompted the supervision changes. Instead the BACB describes the process of how change occurs through SME workgroups.

<p style="text-align:center">Behavior Analyst Professional and Ethical Compliance Code (PECC)</p>

Despite the available data to support the supervision changes, it is reasonable to suggest these changes are intended to support compliance with the supervision code in the Professional and Ethical Compliance code (PECC). BACB PECC contains ten sections relevant to professional and ethical behavior of behavior analysts. All BACB applicants, certificants, and registrants are required to adhere to the PECC. The contents of the PECC were developed in conjunction with codes from other organizations: National Association of School Psychologists, American Socialization Association, National Association of Social Workers, American Educational Research Association, American Psychological Association, American Anthropological Association, American Sociological Association, California Association for Behavior Analysis, Florida Association for Behavior Analysis, and Texas Association for Behavior Analysis (BACB, PECC, 2017).   Table 2.6 presents the PECC as of March 2018.

Table 2.6. *Professional and Ethical Compliance Code*

Code Section	Code Content
1.0 Responsible Conduct of Behavior Analyst	1.01 Reliance on Scientific Knowledge 1.02 Boundaries of Competence 1.03 Maintaining Competence through Professional Development 1.04 Integrity 1.05 Professional and Scientific Relationships 1.06 Multiple Relationships and Conflicts of Interest 1.07 Exploitative Relationships
2.0 Behavior Analysts' Responsibility to Clients	2.01 Accepting clients 2.02 Responsibility 2.03 Consultation 2.04 Third-party involvement in services 2.05 Rights and Prerogatives of Clients 2.06 Maintaining Confidentiality 2.07 Maintaining Records 2.08 Disclosures 2.09 Treatment/Intervention Efficacy 2.10 Documenting Professional Work and Research 2.11 Records and Data 2.12 Contracts, Fees, and Financial Arrangements 2.13 Accuracy in Billing Reports 2.14 Referrals and Fees 2.15 Interrupting and Discontinuing Services
3.0 Assessing Behavior	3.01 Behavior-Analytic Assessment 3.02 Medical Consultation 3.03 Behavior-Analytic Assessment Content 3.04 Explaining Assessment Results 3.05 Consent-Client Records
4.0 Behavior Analysts and the Behavior-Change Program	4.01 Conceptual Consistency 4.02 Involving clients in Planning and Consent 4.03 Individualized Behavior-Change Programs 4.04 Approving Behavior-Change Programs 4.05 Describing Behavior-Change Program

Table 2.6 (continued)

	Objectives
	4.06 Describing Conditions that Interfere with Implementation
	4.07 Environmental Conditions that Interfere with Implementation
	4.08 Considerations Regarding Punishment Procedures
	4.09 Least Restrictive Procedures
	4.10 Avoiding Harmful Reinforcers
	4.11 Discontinuing Behavior-Change Programs and Behavior-Analytic Services
5.0 Behavior Analysts as Supervisors	5.01 Supervisory Competence
	5.02 Supervisory Volume
	5.03 Supervisory Delegation
	5.04 Designing Effective Supervision and Training
	5.05 Communication of Supervision Conditions
	5.06 Providing Feedback to Supervisees
	5.07 Evaluating the Effects of Supervision
6.0 Behavior Analysts' Ethical Responsibility to the Profession of Behavior Analysts	6.01 Affirming Principles
	6.02 Disseminating Behavior Analysis
7.0 Behavior Analysts' Ethical Responsibility to Colleagues	7.01 Promoting an Ethical Culture
	7.02 Ethical Violations by Others and Risk of Harm
8.0 Public Statements	8.01 Avoiding False or Deceptive Statements
	8.02 Intellectual Property
	8.03 Statements by Others
	8.04 Media Presentations and Media-Based Services
	8.05 Testimonials and Advertising
	8.06 In-Person Solicitation

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Table 2.6 (continued)

9.0 Behavior Analysts and Research	9.01 Conforming with Laws and Regulations 9.02 Characteristics of Responsible Research 9.03 Informed Consent 9.04 Using Confidential Information for Didactic or Instructive Purposes 9.05 Debriefing 9.06 Grant and Journal Reviews 9.07 Plagiarism 9.08 Acknowledging Contributions 9.09 Accuracy and Use of Data
10.0 Behavior Analysts' Ethical Responsibility to the BACB®	10.01 Truthful and Accurate Information Provided to the BACB® 10.02 Timely Responding, Reporting, and Updating of Information Provided to the BACB® 10.03 Confidentiality and BACB® Intellectual Property 10.04 Examination Honesty and Irregularities 10.05 Compliance with BACB® Supervision and Coursework Standards 10.06 Being Familiar with This Code 10.07 Discouraging Misrepresentation by Non-Certified Individuals

5.0 Behavior Analysts as Supervisors

Code 5.0 behavior analysts as supervisors broadly states that behavior analysts who serve the role of supervisor must take full responsibility for all facets of this undertaking (PECC, 2017). It encompasses the multiple supervision roles a behavior analyst may fulfill (e.g., BCBA to a precertification candidate, BCBA supervising a BCaBA, BCBA supervising a RBT). The code contains seven subsections which describe how a behavior analyst will fulfill these responsibilities of a supervisor following the PECC (Bailey & Burch, 2011). While each subsection describes the responsibility of a behavior analyst supervisor, generally speaking, these subsections are broad statements

that do not detail explicit supervisory practices. While some subsections may appear relatively easier to interpret (e.g., 5.06 providing feedback to the supervisee) other subsections are less clear (e.g., 5.02 supervisory volume). Therefore, evaluating the BACB Task List designed to prepare aspiring behavior analysts provides useful information in how behavior analysts are trained to become effective and efficient supervisors prior to obtaining certification. Table 2.7 presents the Code 5.0 and the subsections.

Table 2.7. *BACB® PECC 5.0- The behavior analyst as a supervisor*

PECC Code 5.0	Description
5.01 Supervisory Competency	Behavior Analyst supervise only within their scope that Behavior Analyst has been trained
5.02 Supervisory Volume	Behavior Analyst take on only a volume of supervisory activity that is commensurate with their ability to be effective
5.03 Supervisory Delegation	Behavior analysts delegate to their supervisees only those responsibilities that such persons can reasonably be expected to perform competently, ethically, and safely If the supervisee does not have the skills necessary to perform competently, ethically, and safely, behavior analysts provide conditions for the acquisition of those skills
5.04 Designing Effective Supervision and Training	Behavior Analysts ensure that supervision and trainings are behavior analytic in content, effectively, and ethically designed and meet the requirements for licensure, certification, or other defined goals

Table 2.7 (continued)

5.05 Communication of Supervision Conditions	Behavior Analysts provide a clear written description of the purpose, requirements, evaluation criterion, conditions, and terms of supervision prior to the onset of the supervision
5.06 Providing Feedback to the Supervisees	(a) Behavior Analysts design feedback and reinforcement systems in a way that improves supervisee performance
	(b) Behavior Analysts provide documented, timely feedback regarding the performance of a supervisee on an ongoing basis
5.07 Evaluating the effects of supervision	Behavior Analysts design systems for obtaining ongoing evaluation of their own supervision activities

BACB® Task List

The BACB Task List serves as the foundation for the BACB certification exam.

The task list includes the knowledge, skills, and abilities that are deemed critical to the

BACB certification. The BACB goes through these systematic job analyses to validate

current task list competencies while also making any modifications (Shook, Johnston, &

Mellichamp, 2004). The first and second edition task lists fell under the Florida Behavior

Analysis Certification Program prior to the incorporation of the BACB in 1998. For

purposes of this review, I will focus on the BACB Task Lists (i.e., third, fourth, and fifth

editions) because these editions were operated solely by the BACB. A review of the third

edition, fourth, and fifth edition task list provides context for how aspiring behavior

analysts are trained to meet the expectations of the PECC 5.0.

The third edition task list was released in fall 2005 and was in effect until December 31, 2014. This was the first task list the BACB assumed full responsibility from Florida Certification program. This third edition task list contains 10 content areas. This task list does not have an explicit supervision content area; however, one competency explicitly uses the term supervision. Competency 1.2 describes supervision relative to practicing within one's limits of professional competency in applied behavior analysis, and obtain consultation, supervision, training, or make referrals as needed.

The fourth edition was released on January 1, 2015 and remains in effect until December 31, 2021. The task list is organized into 11 content areas spread out across three sections: (1) basic behavior-analytic skills (2) client-centered responsibilities and (3) foundational knowledge. Fourth edition task list houses supervision in section (2) client-centered responsibilities, content area K: implementation, management, and supervision. There are 10 competencies described in Section K. In table 2.8, a summary of content area K is provided.

Table 2.8. *Task List Section K*

Task List K	Description
K-01	Provide for ongoing documentation of behavioral services.
K-02	Identify the contingencies governing the behavior of those responsible for behavior-change procedures and design interventions accordingly
K-03	Design and use competency-based training for persons who are Responsible for carrying out behavioral assessment and behavior-change procedures.
K-04	Design and use effective performance monitoring and reinforcement systems

Table 2.8. (continued)

K-05	Design and use systems for monitoring procedural integrity
K-06	Provide supervision for behavior-change agents
K-07	Evaluate the effectiveness of the behavioral program
K-08	Establish support for behavior-analytic services from direct and indirect consumers
K-09	Secure the support of others to maintain the client's behavioral repertoires in the natural environments
K-10	Arrange for orderly termination of services when they are no longer required

The fifth edition task will go into effect on January 1, 2022. The task list is organized into 10 content areas spread out across two sections: (1) foundations and (2) applications. The fifth edition task list houses supervision in section (2) applications, content area I: personnel supervision and management. There are 8 competencies described in content area I. Table 2.9 provides a summary of content area I. Through a comparison of these iterations, I observe a systematic shift to more closely align with the PECC 5.0.

In the third edition task list, there is no explicit content area that mentions supervision; there is a vague mention of the term supervision within the ethics content area competency 1.2. In the fourth edition task list, there is a content area that includes the descriptor supervision with 1 of the 10 competencies (i.e. 10%), K-06 explicitly contains the word supervision in the item description. Finally, the fifth edition task list has a content area that includes the descriptor supervision with 4 of the 8 items (i.e.,

50%), I-01, I-02, I-03, I-08, explicitly contain the word supervision in the item

description.

Table 2.9. *Task List Section I*

Task List I	Description
I-01	State the reasons for using behavior-analytic supervision and the potential risks of ineffective supervision (e.g., poor client outcomes, poor supervisee performance)
I-02	Establish clear performance expectations for the supervisor and supervisee.
I-03	Select supervision goals based on an assessment of the supervisee's skills
I-04	Train personnel to competently perform assessment and intervention procedures
I-05	Use performance monitoring, feedback, and reinforcement systems
I-06	Use functional assessment approach (e.g., performance diagnostics) to identify variables affecting performance.
I-07	Use function-based strategies to improve personnel performance
I-08	Evaluate the effects of supervision (e.g., on client outcomes, on supervisee repertoires)

The rapid growth in demand for behavior analysts drives the need to ensure high

quality supervision practices. These supervision practices should align with the BACB

Task List to support compliance with the BACB PECC. Ongoing and systematic

revisions to the BACB Task Lists reflect further refinement and specificity of supervision

competencies in the fifth edition task list. Given the future implementation date of

January 1, 2022, it is critical to determine what information is currently available to

certified practitioners who are supervising the next generation of aspiring behavior

analysts.

Supervision Practices in Applied Behavior Analysis

Systematic job analysis conducted by the BACB guides the development of Knowledge, Skills, and Abilities (KSAs) (Shook et al, 2004). In turn, the KSAs become individual competencies that compromise the BACB Task List. The job analysis process intends to be a dynamic process that allows for professionals to update current required competencies as a field develops and progresses. Current results from the recent 2016 BACB job analysis indicate professional competencies for a certified behavior analyst include supervision repertoires (BACB®, 2017).

The reason for the inclusion of supervision repertoires as a critical aspect of the BCBA/BCBA-D repertoires can be linked back to two main reasons. The main and obvious reason is the rapid growth of the field (BACB®, 2017 Certificant Data). The second reason is the insurance reform laws mandating ABA coverage for individuals with autism have supervision provisions for paraprofessionals (e.g., registered behavior technicians (RBTS) (Hartley et. al, 2016). During the first installments of the task list, the BACB was not able to predict the growth rate of this relatively young profession nor was the BACB able to predict the state-mandated insurance reforms would be passed in a majority of the United States. Thus, the recent addition of explicit supervision repertoires is relative to increase in consumer demand for high quality behavior analytic services that require supervision of paraprofessionals.

A majority of supervision related publications admittedly lack empirical evidence to support the recommendations (LeBlanc & Luiselli, 2016). Despite this current lack of strong empirical evidence, the goal is to disseminate information to assist behavior analyst supervisors to align with the PECC Code 5.0. Based on my calculations from the

BACB certificant data, I estimate approximately 76% of current eligible BCBA/BCBA-Ds supervisors of precertification candidates fell under the first-third task list editions (BACB website, Certificant Data). This means a majority of eligible supervisors were not required to receive explicit instruction in supervision through the coursework requirement. Therefore, similar to the evolution of the task list, the intent is to gradually create a robust ABA supervision literature base. Table 2.10 summarizes number of publications per each part of code 5.0.

Table 2.10. *PECC Supervision Related Publications by Code Subsection*

PECC 5.0	ABA
5.01 Supervisory Competence	1
5.02 Supervisory Volume	6
5.03 Supervisory Delegation	1
5.04 Designing Effective Training	8
5.05 Communication of Supervision Conditions	6
5.06 Providing Feedback	10
5.07 Evaluating Effects of Supervision	5

Current literature highlights several recommended practices suggests indicators of high quality and effective supervision. These recommended practices are derived from information available from other helping fields, practical recommendations that have face validity, and previously established protocols that have been established as effective supervision practices. I will review literature in relation to the PECC code.

5.01 Supervisory Competence

Behavior analysts supervise only within the scope that they have been trained. The BACB 2012 supervision curriculum highlights seven indicators of compliance with this part of the supervision code: (1) creating a continuous learning community to enhance supervisory and training for self and supervisee, (2) regular review of resources and research for best practices in supervision, (3) supervisory study groups, (4) attending conferences, (5) seeking peer review, and (6) seeking mentorship and (7) describing the purposes of supervision and the outcomes of ineffective supervision (BACB, 2012). The supervisor also understands her competencies relative to demographics, diagnosis, and cultural norms. When a supervisor identifies a deficit, she will seek to gain knowledge, make a referral, or decline supervision (Seller, Alai-Rosales, & MacDonald, 2016).

5.02 Supervisory Volume

Behavior analysts take on only a volume of supervisory activity that is commensurate with their ability to be effective. In relation to the multiple roles a BCBA or BCBA-D may fulfill, this is a critically important consideration in relation to agreeing to supervise precertification candidates (LeBlanc & Luiselli, 2016). The supervisor should consider the amount of time dedicated to supervision of precertification candidates, while also considering time available to create unrestricted activities for the precertification candidate (Hartley, 2016). Beginning January 1, 2022, supervisors will be responsible for creating 60% of unrestricted fieldwork hours (i.e., 780 hours for BCaBA candidate or 1200 hours for BCBA candidate) while also meeting with the precertification candidate 4-6 times a month (BACB, 2017). Accomplishing this entails outlining the time in a supervisor's weekly schedule to ensure available time to take on a

precertification candidate without risking ineffective service delivery to consumers or supervisees or other job exigencies (Sellers, Alai-Rosales, & MacDonald, 2016).   These additional considerations include calculating the amount of time beyond the supervision contact that will be required. For example, Turner et al. (2016), provide an excellent overview of what these additional considerations are: travel time, time preparing materials for the supervisee=, time returning calls or emails. This could easily add on an additional 6 hours or more a month. Separate from the guidance provided on considering hours with the supervisee, the BACB released Treatment Guidelines for Autism Spectrum Disorders (BACB, 2014). These recommendations include 2 hours of supervision by the BCBA/BCBA-D for every 10 hours of direct client treatment. These guidelines are used to benchmark standards of care relative to third party payors in the provision of services delivered to ASD population. All of these components combined create the need for the BCBA/BCBA-D supervisor to closely examine work exigencies prior to agreeing to take on any additional precertification supervisees.

5.03 Supervisory Delegation

It is the full responsibility of the BCBA/BCBA-D supervisor to ensure that a supervisee has the requisite skills to perform a task. If the supervisee does not have the skills, the supervisor should create opportunities for supervisee to practice and acquire these skills (Sellers, Alai-Rosales, & MacDonald, 2016). Failing to assess the supervisee prior to assigning tasks creates the potential safety and ethical risks to the supervisee and consumers.

5.04 Designing Effective Supervision and Training

Behavior analyst supervisors should design evidence-based supervision and training based on best practices. The BACB Supervision Curriculum (2012) outlines explicit steps of what constitutes meeting the criterion. These steps include: (1) assessment of initial skills of supervisee (2) behavioral skills training (3) scheduled observations before, during, and after training and (4) assess application and generalization of skills to new targets, clients, and settings. Further, this particular part of the supervision code has several articles describing the rationale to use evidenced based training practices (Di-Gennaro-Reed & Henley, 2015; Sellers, Alai-Rosales, & MacDonald, 2016). It is necessary to take a baseline assessment of a precertification candidate skills relative to the task list (Sellers, Valentino, & LeBlanc, 2016; Turner, Fischer, & Luiselli, 2016). This baseline assessment should also include the supervisee professional and interpersonal skills (Sellers, LeBlanc, & Valentino, 2016).

5.05 Communication of Supervision Conditions

The BACB Supervision Curriculum (2012) requires the development and review of a contractual agreement of the nature of supervision and performance expectations (BACB, 2012). Further, included within this contract should be a complete description of the requirements of the relationship as well as the scope of the relationship (Sellers, Alai-Rosales, & MacDonald, 2016). Examples of these expectations include time requirements for both parties, content that will be covered, termination of the relationship, conditions in which supervisory relationship may be terminated, and any other mutual expectations such as returning calls or emails within a certain timeframe (Turner, Fischer, & Luiselli, 2016; Valentino, LeBlanc, & Sellers, 2016; Sellers, Valentino, & LeBlanc, 2016).

5.06 Providing Feedback

The BACB Supervision Curriculum (2012) similar to 5.04 has a very clear description of how to give feedback. This particular section of code 5.0 has the most published literature. These items included are: (1) positive and corrective feedback (2) providing an empathetic statement (3) describing ineffective performance (4) provide rationale for desired change (5) provide instructions and demonstration for improvements (6) provide opportunities to practice the desired performance and (7) provide immediate feedback. Several articles describe the need for reinforcement and feedback to be delivered in a timely manner in order to positively impact the supervisee's future behavior (Sellers, Alai-Rosales, & MacDonald, 2016; Turner, Fischer & Luiselli, 2016; Shepley et al, 2017). Feedback should range across technical, professional, and ethical skills while focusing on creating a plan to address supervisee failing to demonstrate competency in any of these areas (Sellers, Valentino, & LeBlanc, 2016). Finally, the supervisor should deliver feedback using effective interpersonal skills that establish and maintain an effective supervisor and supervisee relationship (Di-Gennaro-Reed & Henley, 2015).

5.07 Evaluating the Effects of Supervision

The BACB Supervision Curriculum (2012) describes several supervision evaluations in three separate categories: (1) supervisee, (2) staff, and (3) client. In meeting the expectations of this part of code 5.0, a supervisor must also self-assess her own supervision skills routinely to determine the effectiveness of her supervision behavior (Turner, Fisher, & Luiselli, 2016). Failing to systematically evaluate the impact

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of supervision, may lead to the delivery of ineffective supervision (Sellers, Alai-Rosales, & MacDonald, 2016; Sellers, LeBlanc, & Valentino, 2016).

Common points among these articles reflect a general consensus there is a need for additional resources to support behavior analyst supervisors. As we discussed earlier in this review, there is little objective information available on what supervisory repertoires are being used to demonstrate compliance with PECC 5.0. Among the discussion points of these articles lies another commonality; there is lack of empirical evidence to support these recommendations. Each article discusses the need for additional research that will further our understanding of behavior analytic supervision of precertification candidates (Sellers, Alai-Rosales, & MacDonald, 2016; Turner, Fischer & Luiselli, 2016; Shepley et al, 2017). Further contributions to this stark literature base will assist the field in establishing evidenced based protocols to use with precertification candidates.

Given the lack of available resources and empirical evidence that are available to certificants that have fallen under previous task list editions, research is needed to identify what current qualified BCBA/BCBA-D supervisors are doing relative to recommended supervisory practices. This baseline assessment will provide information to fine tune future lines of research and improvements in supervision practices of behavior analyst supervisors. My goal will be to disseminate information on specific technology that will assist supervisor compliance with PECC 5.0. Beyond identifying procedures, it is also necessary to identify the antecedent conditions that produce effective and efficient supervisors of precertification candidates (e.g., supervision coursework) because this will protect the integrity of the professional practice of ABA. Identifying these antecedent

conditions will concurrently serve to inform university and college coursework curriculum while assisting current BCBA/BCBA-D supervisors to align with recommended best practices in the upcoming fifth edition task list and support compliance with the PECC 5.0.

CHAPTER III

METHODOLOGY

In this study, I examined individual Board-Certified Behavior Analysts (BCBA) and Board-Certified Behavior Analysts-doctoral (BCBA-D) perceptions of supervision practices according to requirements set forth in the Behavior Analyst Certification Board (BACB) Professional and Ethical Compliance Code (PECC) 5.0 *The behavior analyst as a supervisor.* Four research questions guided my study:

1. How often are supervisors reporting use of recommended supervisory behaviors with precertification candidates?

2. Are there significant differences between the means of participant responses for PECC 5.0 and Miscellaneous category?

3. Are there significant differences between the means of participant responses for PECC 5.0 and Miscellaneous categories relative to supervisor demographics?

4. Are there correlations in certification outcomes relative to supervisors reported individual supervision behaviors?

Instrument Development of the BCBA/BCBA-D Supervision Practices of Precertification Candidates Survey (SPPC)

I developed the SPPC to assess information pertaining to individual supervision repertoires of BCBAs and BCBA-Ds in the preparation of precertification BCBA or BCaBA candidates for the purpose of this study. As supported by BACB requirements for a supervisor, SPPC survey to consisted of items that are related to the PECC 5.0. *The*

behavior analyst as a supervisor.

Item Development

I used EBSCO, Google Scholar, and ProQuest databases to locate publications geared towards behavior analysts. Then I used an advanced keyword search terms "BACB Certification", "fieldwork experiences", and "BACB Supervision" to locate articles geared towards behavior analysts as supervisors. I used the findings of these articles to determine recommended supervision practices. The recommended supervision practices were categorized by the publishing author according to the PECC 5.0. The PECC 5.0 seven categories in section two are shown in Table 3.1 along with the description provided by the BACB® (BACB, n.d.).

Table 3.1. *Behavior Analyst Certification Board (BACB) Professional and Ethical Compliance Code (PECC) 5.0- The behavior analyst as a supervisor*

PECC Code 5.0	Description	References
5.01 Supervisory Competency	Behavior Analyst supervise only within their scope that Behavior Analyst has been trained	BACB PECC
5.02 Supervisory Volume	Behavior Analyst take on only a volume of supervisory activity that is commensurate with their ability to be effective	BACB PECC
5.03 Supervisory Delegation	Behavior analysts delegate to their supervisees only those responsibilities that such persons can reasonably be expected to perform competently, ethically, and safely	BACB PECC

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Table 3.1 (continued)

	If the supervisee does not have the skills necessary to perform competently, ethically, and safely, behavior analysts provide conditions for the acquisition of those skills	
5.04 Designing Effective Supervision and Training	Behavior Analysts ensure that supervision and trainings are behavior analytic in content, effectively, and ethically designed and meet the requirements for licensure, certification, or other defined goals	BACB PECC
5.05 Communication of Supervision Conditions	Behavior Analysts provide a clear written description of the purpose, requirements, evaluation criterion, conditions, and terms of supervision prior to the onset of the supervision	BACB PECC
5.06 Providing Feedback to the Supervisees	(a) Behavior Analysts design feedback and reinforcement systems in a way that improves supervisee performance (b) Behavior Analysts provide documented, timely feedback regarding the performance of a supervisee on an ongoing basis	BACB PECC
5.07 Evaluating the effects of supervision	Behavior Analysts design systems for obtaining ongoing evaluation of their own supervision activities	BACB PECC

Due to the sparse publications in this area, I included conceptual articles that

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describe best practices for supervision of precertification candidates. Based on the

findings, I considered inclusion of suggested supervision practices if the recommendation

was mentioned at least one time relative to the specific subsection of the PECC 5.0

Behavior Analyst as a Supervisor. This search produced the final list of supervisor

practices recommended for professionals who are supervising precertification candidates.

I placed any recommended supervisor practices that were not explicitly identified with

5.0 subsection into a miscellaneous category. Table 3.2 represents the frequency

behaviors related to specific sections in code 5.0 are mentioned in publications.

Table 3.2. *PECC Supervision Related Publications by PECC Code 5.0*

PECC 5.0	Publications
5.01 Supervisory Competence	1
5.02 Supervisory Volume	6
5.03 Supervisory Delegation	1
5.04 Designing Effective Training	8
5.05 Communication of Supervision Conditions	6
5.06 Providing Feedback	10
5.07 Evaluating Effects of Supervision	5

I developed survey questions for each of the seven subsections of PECC 5.0

through a content analysis of the articles. My content analysis consisted of identifying a

section of the PECC 5.0 *Behavior Analyst as a Supervisor* that the author assigned the

recommended supervisor behavior to. In addition, an eighth category included

supervision practices that are recommended but are not directly associated to a specific

part of PECC 5.0 by the publishing author. In order to maintain a uniformed structure, I transformed behaviors, to ascertain information on a Likert-scale versus a dichotomous scale. These eight categories are:

1. 5.01 Supervisory Competence

2. 5.02 Supervisory Volume

3. 5.03 Supervisory Delegation

4. 5.04 Designing Effective Supervision and Training

5. 5.05 Communication of Supervision Conditions

6. 5.06 Providing Feedback

7. 5.07 Assessing the Outcomes of Supervision

8. Miscellaneous Recommended Supervision Practices

In order to collect validity evidence, I used a two-part process (a) expert review and (b) content review to ensure a comprehensive and valid instrument.

Expert Review

To collect evidence to support validity of the SPPC, I obtained agreement from three scholars, who are doctoral level Board Certified Behavior Analysts (BCBA-Ds). These BCBA-Ds examined the instrument for content validity, comprehensiveness, and any potential threats to the collection of information. The BCBA-Ds provided evidence of content validity through the assessment of the relevance of each item to the associated category. Their task included evaluating all survey questions, by PECC 5.0, in three categories: relevance (the degree to which the question is applicable for the population of the study participants), significance (the degree to which the question is suitable for the associated PECC 5.0 area), and clarity of the questions. All feedback from the expert

review was considered for instrument changes. The review process was completed when all reviewers agreed with relevance, significance, and clarity. Changes there were made included: deleting one question that was redundant, providing examples of the targeted behaviors in parenthesis, and using different key word choices (e.g., using set schedule versus clear schedule) in five of the forty-six questions.

Content Review

I contacted local BCBAs and BCBA-Ds through the South Carolina Applied Behavior Analysis (SC ABA) membership email list to request voluntary participation in a one-time content review through a feedback form. I selected a total of six volunteers who meet the inclusion criteria for the study (i.e., BCBA or BCBA-D who supervises precertification candidates). I selected these six volunteers because they served as a similar cohort to those who participated in the study. Six of these BCBAs and BCBA-Ds reviewed the study invitation, instructions, and the survey for format and ease of the questions in the SPPC. This information confirmed that the survey was sensible to the given audience or produced revisions to make it sensible. To obtain these data, I provided each BCBA/BCBA-D a Survey Monkey anonymous web link requesting feedback on:

(a) ability to assess the item based on their recent supervision behaviors

(b) clarity of the survey instructions

(c) ease of understanding the items/indicators

(d) length of time required to complete the survey

Feedback from the content review group was considered to determine the need for any further modifications to the instrument. No additional revisions were made from the content review.

Final Version of the SPPC

The final version of the SPPC was divided into two sections. Section one consisted of items that obtain demographic information from respondents. These demographic variables are years in practice, type of certification, years as a BACB approved fieldwork supervisor, area of study, primary job classification, and fieldwork supervisor preparation. Section two assessed supervisor's perception of frequency of supervisor practices with precertification candidates. All of the items in section two were supported by literature. The supervision practices in section two were randomly ordered.

Participants responded to a series of Likert-scale questions relating to the frequency of supervision behaviors. The survey median time for completion was 11 minutes. The Likert-scale was as follows: 1. *almost never*, 2. *rarely*, 3. *sometimes*, 4. *usually*, 5. *almost always*.

1. *Almost never* (0-20%)

2. *Rarely* (21-40%)

3. *Sometimes* (41-60%)

4. *Usually* (61-80%)

5. *Almost always* (81-100%)

The following is a description of each category of the SPPC.

5.01 Supervisory Competence (Category 1)

I included questions on the SPPC to evoke responses from the respondents on behaviors that are identified in the literature review for Supervisory Competence. Table 3 consists of a summary of supervisory competence behaviors. As reflected in Table 3.3, there is a limited amount of published information related to ensuring a supervisor is in

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compliance with code 5.01. The overriding theme is practicing within an identified scope of competence. Items of selection included:

Table 3.3. *Summary of Development to BCBA and BCBA-D Supervision Repertoires of Precertification Candidates –5.01 Supervisory Competence*

SPPC Question	References
1. I contact literature related to a new competency area.	LeBlanc, Heinicke, & Baker (2012)
2. I engage in professional groups in the area of practice.	LeBlanc, Heinicke, & Baker (2012)
3. I identify any particular credentialing requirements for practicing in areas outside of my original training.	LeBlanc, Heinicke, & Baker (2012)
4. I directly pursue training and supervision on the specifics outside of my original training area.	LeBlanc, Heinicke, & Baker (2012)

5.02 Supervisory Volume (Category 2)

I included questions on the SPPC to evoke responses from the respondents on behaviors that are identified in the literature review for 5.02 Supervisory Volume. Table 3.4 consists of a summary of supervisory volume behaviors. The overriding theme in supervisory volume is the supervisor ensuring that she is able to have scheduled time in to conduct supervision for precertification candidates. SPPC questions 2-9 were included to gather additional information from respondent to corroborate responses from question 1.

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Table 3.4. *Summary of Development to BCBA and BCBA-D Supervision Repertoires of Precertification Candidates –5.02 Supervisory Volume*

SPPC Question	References
1. I have a set schedule showing when I am able to supervise the precertification candidate during my work week.	Sellers, Alai-Rosales, & MacDonald (2016) Turner, Fischer, & Luiselli (2016)
2. At any one time, I provide precertification supervision to this number.	Questions 2-9 included to corroborate responses on self-reported compliance with supervisory volume.
3. Over the past 12-month period, I provide precertification supervision.	
4. As part of my job responsibilities, I provide consultation to the following number of clients.	
5. My client caseload size is dictated by the following.	
6. I supervise RBTs.	
7. When supervising RBTs, the percentage of time I spend supervisions direct service implementation is.	
8. My employer/agency/workplace/self-owned private practice allots the following amount of time for precertification candidates during my work week.	
9. I schedule the following number of hours a week to the supervision of precertification candidates:	

5.03 Supervisory Delegation (Category 3)

I included questions on the SPPC to evoke responses from the respondents on behaviors that are identified in the literature review for Supervisory Delegation. Table 3.5 consists of a summary of supervisory delegation behaviors.

Table 3.5. *Summary of Development to BCBA and BCBA-D Supervision Repertoires of Precertification Candidates – 5.03 Supervisory Delegation*

SPPC Question	References
1. I confirm that precertification candidate has required skill set before I delegate task.	Sellers, Alai-Rosales, & MacDonald (2016) Turner, Fischer, & Luiselli (2016)
2. I create opportunities for precertification candidate to practice a skill set.	Sellers, Alai-Rosales, & MacDonald (2016)

5.04 Designing Effective Training (Category 4)

I included questions on the SPPC to evoke responses from the respondents on behaviors that were identified in the literature review for designing effective training for certification seeking candidates. Table 3.6 consists of a summary of supervisor designing effective training for supervisee. Question 2 intended to corroborate information that is reported under section II of survey: fieldwork supervisor preparation.

Table 3.6. *Summary of Development to BCBA and BCBA-D Supervision Repertoires of Pre-Certification Candidates –5.04 Designing Effective Supervision and Training*

SPPC Question	References
1. I use behavioral skills training with precertification candidate to teach BACB task list competencies.	Sellers, Alai-Rosales, & MacDonald (2016)

Table 3.6 (continued)

2. I developed fieldwork precertification candidate protocols by.	Question 2 included to gather information to support 5.04.

5.05 Communication of Supervision Conditions (Category 5)

I included questions on the SPPC to evoke responses from the respondents on behaviors that are identified in the literature review for communication of supervision conditions. Table 3.7 consists of a summary of supervisor behaviors related to communication of supervision conditions.

Table 3.7. *Summary of Development to BCBA and BCBA-D Supervision Repertoires of Precertification Candidates – 5.05 Communication of Supervision Conditions*

SPPC Question	References
1. I have a written supervision contract with the precertification candidate.	BACB, 2012 Supervision Curriculum Sellers, Valentino, & LeBlanc (2016) Sellers, Alai-Rosales, & MacDonald (2016) Turner, Fischer, & Luiselli (2016)
2. I review written supervision contract with precertification candidate prior to starting PS supervision.	BACB, 2012 Supervision Curriculum Turner, Fischer, & Luiselli (2016)
3. I have a supervision contract that outlines conditions for termination of the supervisory relationship with the precertification candidate.	Turner, Fischer, & Luiselli (2016)
4. I discuss performance expectations with precertification candidate.	Turner, Fischer, & Luiselli (2016)

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5.06 Providing Feedback (Category 6)

I included questions on the SPPC to evoke responses from the respondents on

behaviors that are identified in the literature review for providing feedback to

supervisees. Table 3.8 consists of a summary of providing feedback to the precertification

candidate.

Table 3.8. *Summary of Development to BCBA and BCBA-D Supervision Repertoires of Precertification Candidates – 5.06 Providing Feedback to the Supervisee*

SPPC Question	References
1. I provide positive and corrective feedback on precertification candidate skills in a timely manner.	Sellers, Alai-Rosales, & MacDonald (2016) Turner, Fischer, & Luiselli (2016)
2. I provide instructions and demonstration for precertification candidate in the areas of need.	BACB, 2012 Supervision Curriculum
3. I provide opportunity for precertification candidate to practice desired skills with immediate feedback.	BACB, 2012 Supervision Curriculum
4.I have written evaluation system to assess precertification candidate performance in professionalism and behavior analytic skills.	Turner, Fischer, & Luiselli (2016)
5. I objectively document corrective feedback.	Sellers, Alai-Rosales, & MacDonald (2016) Turner, Fischer, & Luiselli (2016)

5.07 Evaluating Effects of Supervision (Category 7)

I included questions on the SPPC to evoke responses from the respondents on

behaviors that are identified in the literature review for evaluating the effects of

supervision. Table 3.9 consists of a summary of supervisory competence behaviors.

Table 3.9. *Summary of Development to BCBA and BCBA-D Supervision Repertoires of Precertification Candidates – 5.07 Evaluating Effects of Supervision*

SPPC Question	References
1. I use an evaluation system to determine the effectiveness of my supervision on precertification candidate performance.	BACB Supervision Curriculum (2012) Sellers, Alai-Rosales, & MacDonald (2016) Turner, Fischer, & Luiselli (2016)
2. I use an evaluation system to determine the effectiveness of my supervision based on client performance.	BACB Supervision Curriculum (2012) Sellers, Alai-Rosales, & MacDonald (2016) Turner, Fischer, & Luiselli (2016
3. I use an evaluation system to determine the effectiveness of my supervision fidelity.	BACB Supervision Curriculum (2012) Sellers, Alai-Rosales, & MacDonald (2016) Turner, Fischer, & Luiselli (2016)

Miscellaneous (Category 8)

I included questions on the SPPC to evoke responses from the respondents on behaviors that are identified in the literature review or by the BACB supervision curriculum as important for the supervisory repertoire; however, are not explicitly described as part of compliance with a subsection of PECC 5.0 *Behavior Analyst as a Supervisor* by the authors of the peer reviewed published literature or by the BACB. Table 3.10 consists of a summary of these additional supervisory behaviors.

Table 3.10. *Summary of Development to BCBA and BCBA-D Supervision Repertoires of Precertification-Seeking Candidates – Miscellaneous*

SPPC Question	References
1.I arrive on time for scheduled supervisions with the precertification candidate.	Ellis & Glenn (1995)

2. I keep my scheduled appointments.	Ellis & Glenn (1995) Sellers, Valentino, & LeBlanc (2016) Sellers, Alai-Rosales, & MacDonald (2016) Turner, Fischer, & Luiselli (2016)
3. I conduct group supervision for precertification candidate.	Sellers, LeBlanc, & Valentino (2016)
4. I create group activities for precertification candidate.	Valentino, LeBlanc, & Sellers (2016) Sellers, Valentino, & LeBlanc (2016) Ellis & Glenn (1995)
5. I include ethics as part of the supervision experiences.	Sellers, LeBlanc, & Valentino (2016)
6. I use behavior skills training to teach case presentation to precertification candidate.	Turner, Fischer, & Luiselli (2016)
7. I take baseline of precertification candidate skills relative to the task list items.	BACB Supervision Curriculum (2012)
8. I discuss how to give and receive feedback with the precertification candidate. .	Sellers, LeBlanc, & Valentino (2016)
9. I schedule direct observations of precertification candidate	BACB Supervision Curriculum (2012)
10. I scheduled standing supervision appointments with the precertification candidate. .	Valentino, LeBlanc, & Sellers (2016)
11. I send out a meeting agenda prior to my supervision meeting with the precertification candidate.	Valentino, LeBlanc, & Sellers (2016)
12. I take supervision meeting notes and send notes to precertification candidate.	Valentino, LeBlanc, & Sellers (2016)
13. I discourage distractions during the supervision meeting.	Valentino, LeBlanc, & Sellers (2016) Ellis & Glenn (1995)

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14. I detect barriers to supervision and address them with the precertification candidate.	Sellers, LeBlanc, & Valentino (2016)
.	
15. I continue the professional relationship post-certification.	Sellers, LeBlanc, & Valentino (2016)
16. I self-assess my interpersonal skills.	Sellers, LeBlanc, & Valentino (2016)
17. I have a peer evaluate my precertification candidate supervision.	Sellers, LeBlanc, & Valentino (2016)
18. I observe body language of precertification candidate to make adjustments in my own supervision behaviors.	Valentino, LeBlanc, & Sellers (2016)
19. I maintain positive rapport with precertification candidate.	Sellers, Valentino, & LeBlanc (2016) Turner, Fischer, & Luiselli (2016)
20. I review literature for best practices in any area of application that I practice.	BACB Supervision Curriculum (2012)
21. I attend conferences.	BACB Supervision Curriculum (2012)
22. I participate in peer review.	BACB Supervision Curriculum (2012)
23. I seek mentorship.	BACB Supervision Curriculum (2012)
24. I participate in supervisory study groups.	BACB Supervision Curriculum (2012)
25. I return calls or emails from precertification candidates within 2 business days	Turner, Fischer, & Luiselli (2016)
26. I am able to create 60% of fieldwork hours in unrestricted activities for the precertification candidate during each supervision period.	BACB 2022 Requirements

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Recruitment Procedures

To recruit BCBA/BCBA-Ds, I used the BACB mass email service to request participation in the survey. The mass email service permits certain types of educational and informational email messages to be distributed by the BACB on behalf of a requesting entity. l distributed the survey following a three-step process: I completed the mass email service request form to seek approval. I received approval from the BACB for the mass email distribution. The mass email was distributed to BCBA/BCBA-Ds with a brief summary of the survey along with instructions and the survey link. The URL link was open for a 4-week period (Dillman, 1978; Johnson & Morgan, 2016). Due to public information available on the BACB certificant registry, the number of eligible participants is 32,008 (BACB, n.d.). The BACB uses a third-party service to deliver mass emails; therefore, the BACB would not guarantee the certificant would open the email or that the email would pass a spam filter.

Data Analysis Procedures

I used an online survey to gather data. The individual survey responses from Qualtrics were automatically run through a statistic package available through the programming language Python 3.6.6. The analysis specific to each of the four research questions is below. *Research question 1. How often are supervisors reporting use of recommended supervisory behaviors with precertification candidates?* I used descriptive statistics, means, median, and standard deviation to explore the survey data related to participant responses to frequency of recommended supervisory behaviors. *Research question 2. Are there significant differences between the means of participant responses for PECC 5.0 and Miscellaneous categories?* I ran a single between groups

ANOVA to look for significant differences in the means of the PECC 5.0 sub-categories and the miscellaneous category.

Research question 3: Are there significant differences between the means of participant responses for PECC 5.0 sub-categories relative to supervisor demographics? I ran multiple one way ANOVAs to look at each PECC 5.0 sub-category across fourteen demographics (i.e., years in practice, years as a supervisor, area of study, job classification, place of employment, geographic region, supervision format, number of candidates, number of candidates in the past twelve months, allotted supervision hours, scheduled supervision hours, number of clients/consumers, who dictates schedule, and RBT Supervision %). These demographics were highly useful for practical purposes because these are known groups that can be targeted for research and/or training purposes. There were many combinations of demographics and behaviors for this question, so there were many results. I set the statistical significance level (alpha) at .05 and compared to the obtained P-value. I conducted a Tukey HSD post hoc analysis for P-values less than alpha.

Research question 4. Are there correlations in certification outcomes relative to supervisors reported individual supervision behaviors? I ran a Spearman correlation test to determine how individual supervision practices correlate with the percentage of candidates who passed the BACB exam (i.e., I ran a Spearman correlation of each individual supervisor behavior versus the reported percentage of candidates that passed BACB exam for each supervisor). Spearman correlation did not make assumptions about normal distributions; therefore, it was better able to account for discrete variables. It

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provided a more representative calculation relative to the Pearson correlation, which assumes the normal distribution of continuous variables.

CHAPTER IV

RESULTS

The purpose of my study was to examine the supervision practices of BCBA/BCBA-D who supervise precertification candidates, specifically, determine if there were any significant differences between supervisor demographics and supervision practices. These significant differences could be used to form hypothesis to allow for further testing. I developed the Supervision Practices of Precertification Candidates (SPPC) survey to assess the reported occurrence of recommended supervisor behaviors used by BCBA/BCBA-D supervisors with precertification candidates (PS). I used descriptive statistics to analyze supervisor's self-reported frequency of individual supervision behaviors. I used a single one-way between groups ANOVA to determine if there were statistically significant differences between the PECC supervision categories and miscellaneous category. I used a single one-way between groups ANOVA to determine if there were statistically significant differences between supervisor demographics and PECC supervision categories and miscellaneous category. I used a Spearman Correlation to determine if there were any significant differences in item level questions relative to reported precertification BACB exam pass rate.

Participant Description

Data was used from each case where the responses met the criteria of opening the survey and "last question finished" by the responder. A total of 351 surveys met these

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criteria. All the survey responses were received through an anonymous online format using a Qualtrics password secure login. First, I computed the descriptive analysis across multiple demographic factors. These factors consisted of years in practice, degree of study, primary job classification, years as a BACB approved fieldwork supervisor, additional job exigencies, fieldwork supervision preparation, fieldwork supervision resources, RBT supervision requirement, consumer/client caseload size, control of caseload, and geographic information.

Of these 351 surveys, 317 respondents met criterion as a BACB supervisor for precertification candidates. Using BACB published certificant data, the overall survey response rate for BCBA/BCBA-Ds was 1.1% (i.e., 351 of 32,008) (BACB, n.d.). Figure 4.1 and figure 4.2 highlight the responses from each state and overall response rate percentage relative to the number of BCBA/BCBA-Ds in each respective state. Two respondents chose not to disclose state information bringing the n= 317 to 315. A total of 42 states are represented in addition to respondents who live outside of the United States. The states that are not represented are: Arkansas, Delaware, Idaho, Mississippi, New Mexico, Oklahoma, South Dakota, and Wyoming. These states all have one confirmed variable in common. They have 85 or less BCBA/BCBA-D level certified individuals in the state as of the November 2018 data on the BACB registry (BACB, n.d.). A state would need at least 90 BCBA/BCBA-D certificants to produce 1 respondent using the average 1.1% BACB response rate. California represents the state with the highest number (n=37, 10.5%) of overall responses (n=315). Hawaii, Oregon, Washington, Utah, Louisiana, North Dakota, and Montana had the lowest responses (n=1). South Carolina represents the state with the highest overall response rate per BCBA/BCBA-Ds (n=28,

8.9%). Washington represents the state with the lowest response rate (*n*=1, 0.13 %). In

figure 4.2, the black dashed line represents the overall BACB 1.1% response rate.

Approximately half of the states represented fell below the 1.1% response rate.
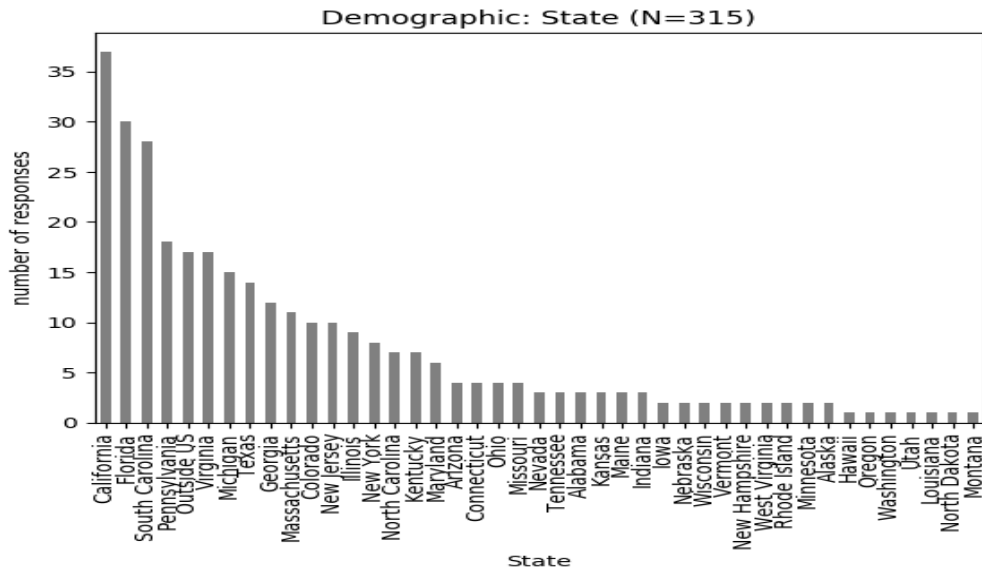
Figure 4.1 The y-axis represents number of survey responses per a state.
The x-axis represents the states in descending order.
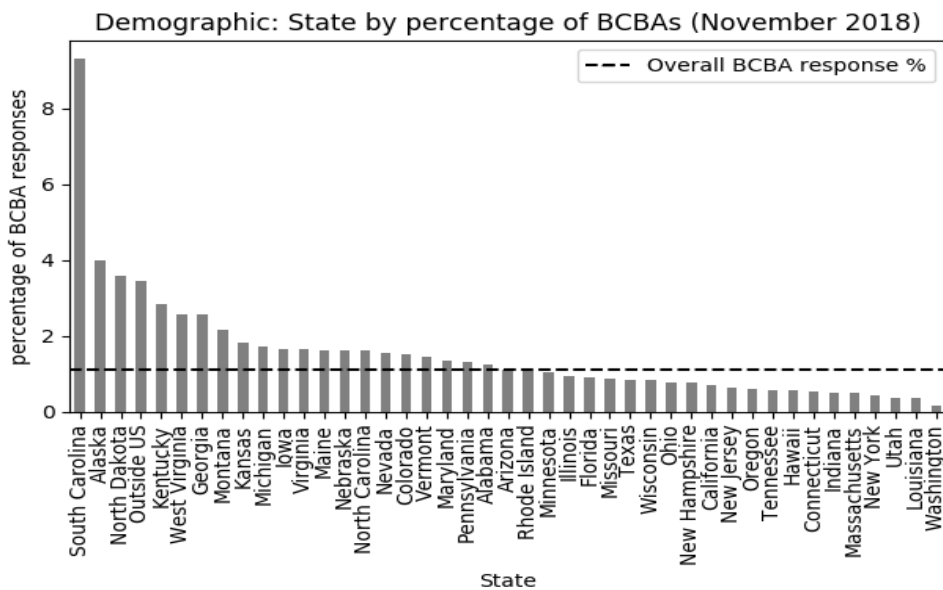
Figure 4.2 The y-axis represents response rate percentage per BCBA/
BCBA-Ds in state. The x-axis represents states in descending order.
The black dashed line represents the overall BACB 1.1% response
rate average.

Respondent Demographics

A majority of the respondents (n=129 of 317, 40.7%) have been certified for less than 5 years. A large majority have been a precertification candidate (PS) supervisor for less than 5 years (n=193, 60.90%). The most commonly reported degree area of study was behavior analysis (n=122, 38.5%). An overwhelming majority of respondents identified primary job classification as a behavior analyst (n=263, 83%). When asked about place of employment, respondents selected 'other' (n=110, 34.7%), home-based (n=92, 29%), clinic-based (n= 86, 27.1%), and university (n=29, 9.2%). Table 4.1 summarizes the years certified, years as a supervisor, area of study, job classification, and place of employment.

Table 4.1. *Demographic Descriptions of Survey Respondents*

	n	%
Years Certified		
0-5	129	40.70
5.01-10	117	36.90
10.01-15	52	16.40
15.01-20	15	4.70
20.01 >	4	1.30
Years as a Supervisor		
0-5	193	60.90
5.01-10	92	29.00
10.01-15	24	7.60
15.01-20	6	1.90
20.01 >	2	0.60
Area of Study		
Behavior analysis	122	38.50
Education	94	29.70
Psychology	59	18.60
Other	24	7.50
Counseling	18	5.70

Table 4.1 (continued)

Job Classification

Behavior analyst	263	83.00
Other	22	7.00
Professor	14	4.40
Psychologist	9	2.80
Researcher	5	1.60
Counselor	2	0.60
Teacher	2	0.60

Place of Employment

Other	110	34.70
Home-based	92	29.00
Clinic-based	86	27.10
University	29	9.20

Supervision Specific Demographics

One hundred and seventy-six (45.2%) respondents indicated their current supervision location was agency- based. Over half of the respondents ($n=170$ of 317, 53.6%) indicated individual supervision format was most commonly used with precertification candidates (PS). In relation to initial training to prepare for precertification candidate supervision, respondents selected all methods that applied; thus, the n was greater than total respondents. Respondents reported internet based continuing education ($n=249$, 32.9%) live conferences ($n=215$, 28.4%), mentoring ($n=171$, 22.5%), institution-based coursework ($n=102$, 13.5%), other ($n=13$, 1.8), and nothing ($n=7$, 0.9%). Supervision resources used to support PS supervisors were ongoing training ($n=183$, 24.4%), ($n=124=16.5$%), performance feedback ($n=118$, 15.7%), office time ($n=108$, 14.4%), monetary compensation ($n=88$, 11.7%), administrative assistance ($n=79$, 10.6), none ($n=26$, 3.5%), other ($n=24$, 3.2%). When asked about supervision protocol source, respondents selected all items that applied; thus, the n was greater than

total respondents. The most frequently endorsed supervision protocol source was online CEs ($n=182$, 22%). The remaining options used as a supervision protocol source were graduate coursework ($n=174$, 21%), mentorship ($n=159$, 19.2%), published supervision curriculum ($n=149$, 18%), live CEs ($n=120$, 14.6%), other ($n=45$, 5.2%). Over seventy-five percent of respondents indicated they have supervised a total of 1-3 precertification candidates ($n=245$, 77.3%). Less than five percent of respondents selected 8 > total candidates ($n=11$, 3.5%). When respondents were asked to report the total number of PS over the past 12 months, an overwhelming majority indicated 1-3 ($n=215$, 67.9%).

Finally, respondents were asked to provide information on the total number of weekly hours allotted for supervision (e.g., preparation for contact, contact with candidate, and post meeting tasks) by an employer versus total number actually scheduled by the supervisor. The overall distribution of allotted hours was 0 ($n=73$, 23%), 1-5 ($n=158$, 49.8%), 6-10 ($n=55$, 17.4%), 11-15 ($n=13$, 4.1%), 16+ ($n=5.7$, 21%). The actual scheduled weekly hours used by the supervisor for supervision related tasks and actual contact with PS were 0 ($n=3$, 1%), 1-5 ($n=197$, 62.1%), 6-10 ($n=77$, 24.3%), 11-15 ($n=26$, 8.2%), 16+ ($n=14$, 4.4%). Table 3.2 summarizes supervisor location, supervision format, supervision training, supervision resources, supervision protocol source, total number of precertification candidates in past 12 months, total number of precertification candidates supervised to date, employer allotted weekly hours for supervision, and scheduled weekly hours for supervision.

Table 4.2. *Supervision specific demographics*

	n	%
Supervision location (s) *n*=389		
Agency	176	45.20
Individual private practice	129	33.20
University	52	13.40
School	20	5.10
Other-non-specific	6	1.50
Clinic	3	0.08
State agency	2	0.05
Community program	1	0.03
Supervision format *n=317*		
Individual supervision	170	53.6
Individual/group supervision	123	38.8
Intensive practicum	22	7.00
Group supervision	2	0.60
Supervision Training *n=757*		
Internet-based CEs	249	32.90
Conferences	215	28.40
Mentoring	171	22.50
Institution based coursework	102	13.50
Nothing	7	0.90
Other non-specified	3	0.40
Literature	3	0.40
Company	3	0.40
Personal experience	2	0.30
BACB required online training	2	0.30
Supervision resources *n=748*		
Training	183	24.40
Curriculum	124	16.50
Performance feedback	118	15.70
Office time	108	14.40
Monetary compensation	88	11.70
Administrative assistance	79	10.60
None	26	3.50
Other-non-specified	17	2.30
Meetings	3	0.40
Self	3	0.40
Mentorship	1	0.10
Supervision protocol source *n=829*		
Online CE	182	22.00
Graduate coursework	174	21.00

Table 4.2 (continued)

Mentor	159	19.20
Published supervision curriculum	149	18.00
Live CE	120	14.60
Company	12	1.40
Other-non-specified	9	1.10
Self	7	0.80
BACB publication	6	0.70
Literature	5	0.60
Cooper, Heron, & Heward textbook	2	0.20
None	2	0.20
Podcasts	1	0.10
Professional collaboration	1	0.10
Total number of PS n=317		
1-3	245	77.30
4-7	61	19.20
8-11	8	2.50
12+	3	1.00
Number of PS in past 12 months n=317		
1-3	215	67.90
4-7	73	23.00
8-11	15	4.70
12+	14	4.40
Allotted weekly hours for supervision n=317		
0	73	23.00
1-5	158	49.80
6-10	55	17.40
11-15	13	4.10
16+	18	5.70
Scheduled weekly hours for supervision n=317		
0	3	1.00
1-5	197	62.10
6-10	77	24.30
11-15	26	8.20
16+	14	4.40

Work Responsibilities

One hundred and eighty-eight (59.3%) respondents indicated that they conduct RBT supervision as part of normal work responsibilities. When asked about consumer and client caseload size, a majority of respondents serve 12 or more consumers or clients (n=152, 47.9%) at one time in addition to supervising precertification candidates. A majority of these respondents (54%) reported that an employer dictates control over their caseload size (*n*=170, 54%) versus self (*n*=124, 39%). Table 3.3 summarizes RBT monthly supervision, total consumer caseload size, and control of work schedule.

Table 4.3. *Supervisor work responsibilities*

	n	% of responses
RBT % monthly supervision *n*=317		
Do not supervise RBTs	129	40.70
5% of direct services	55	17.40
10% of direct services	55	17.40
15% of direct services	37	11.60
20% of direct services	41	12.90
Total Consumers/Client Served *n*=317		
Do not serve consumers	25	7.90
1-3	24	7.60
4-7	55	17.40
8-11	61	19.20
12+	152	47.90
Control of Work Schedule *n*=317		
Employer	170	54.00
Self	124	39.00
Do not provide direct services to consumers	22	7.00

How often are supervisors reporting use of recommended supervisory behaviors with precertification candidates?

Respondents completed the SPPC survey instrument and rated their perceived frequency of individual behaviors as measured by a Likert Scale. The frequency was

reported on a Likert scale as follows: 1. *Almost never* (0-20%), 2. *Rarely* (21-40%), 3. *Sometimes* (41-60%), 4. *Usually* (61-80%), 5. *Almost always* (81-100%). Survey responses at the item level were combined to create a category average for each respondent. To visualize this, I displayed the average of individual behaviors relative to the Professional and Ethical Compliance Code (PECC). Table 4.1 reveals overall averages grouped by PECC section *5.0 The Behavior Analyst as a Supervisor.* In addition, the miscellaneous category contained additional recommended behaviors clustered together. *5.05 Communication of Supervision Conditions* had the highest mean M= 4.78 and median at a 5 *almost always.* The behavior in *5.04 Designing Effective Supervision and Training* was M=4.32 with a median of 5 *almost always. 5.06 Providing Feedback* was M=4.26 with a median of 5 *almost always.* There were two exceptions in *5.06* which were the behaviors 'documenting feedback' and 'having a written evaluation system' with a M=3.87 and M=3.70, respectively.

The behaviors in *5.03 Supervisory Delegation* were a M=4.01 with a median of 4 *usually.* Behaviors in *5.01 Supervisory Competence* fell towards the back of the PECC *5.0* analysis. The average ranges were 2.9-4.5. The translation is the behaviors in this section 2 *rarely* to 5 *almost always* occur. Given the nature of this section, it is important to look at these individual items to evaluate the behaviors that are 2 *rarely* occurring. Relative to the 'seeking training and supervision' and any additional 'credentialing required', PS supervisors reported 4 *usually* with a M= 4.53 and M=4.46, respectively. The median responses for both of these items were 5 *almost always.*

A majority of respondents reported 5 *almost always* engaging within their scope and receive additional training, supervision, and credentialing. Using the average in this

case, 4 *usually*, would not accurately represent what a majority of the BCBA/BCBA-Ds are self-reporting. Another item in *5.01,* 'reviewing literature for a new competency area had M=4.04 with a median of 4 *usually*. Lastly, in *5.01* participating in professional groups was M=2.91 indicating rarely with a median of 3 *sometimes*. *5.07 Evaluating the Effects of Supervision* was M=3.48. Evaluating client performance was M=3.26 indicating a 3 *sometimes* with a median score of 3 *sometimes*. Evaluating supervisee performance was M=3.39 sometimes with a median score of 4 *usually*. Evaluating supervision fidelity was M=2.77 with a median of 3 *sometimes.* Finally, the behavior in *5.02 Supervisory Volume* 'having a set schedule for PS supervision' was M=3.33 with a median of 4 *usually*.

Table 4.4. *Individual Behaviors Grouped by PECC 5.0 Behavior Analyst as a Supervisor*

	M	Mdn	SD
5.01 Supervisory Competence	3.67	4	1.39
Literature for new competency area (item 19)	4.04	4	1.01
Outside training area: credentialing required (item 22)	4.46	5	0.90
Outside training area: training and supervision (item 23)	4.53	5	0.85
Professional groups (item 20)	2.91	3	1.54
5.02 Supervisory Volume	3.33	4	1.51
Supervision schedule (item 32)	3.33	4	1.51
5.03 Supervisory Delegation	4.01	4	1.00
Confirm required skill set (item 17)	3.94	4	1.06
Practice skill set (item 34)	4.09	4	0.93
5.04 Designing Effective Training	4.32	5	0.89
Behavior skills training (item 38)	4.32	5	0.89
5.05 Communication of Supervision Conditions	4.78	5	0.68
Performance expectations (item 41)	4.58	5	0.81
Supervision termination clause (item 37)	4.89	5	0.52
Written supervision contract (item 35)	4.92	5	0.42

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Table 4.4 (continued)

Review supervision contract (item 45)	4.72	5	0.82
5.06 Providing Feedback to Supervisees	4.26	5	1.06
Document feedback (item 44)	3.87	4	1.22
Immediate feedback (item 54)	4.29	5	0.89
Instructions and demonstration (item 49)	4.55	5	0.74
Positive and corrective feedback (item 36)	4.74	5	0.52
Written evaluation system (item 42)	3.70	4	1.26
5.07 Evaluating Effects of Supervision	3.48	4	1.50
Evaluate client performance (item 46)	3.26	3	1.47
Evaluate supervisee performance (item 40)	3.39	4	1.44
Supervision fidelity (item 48)	2.77	3	1.54
Misc.	3.90	4	1.37
60% fieldwork hours (item 26)	3.81	4	1.12
Arrive on time (item 64)	4.81	5	0.47
Attend conferences (item 70)	4.25	5	1.01
BST case presentation (item 52)	3.70	4	1.43
Continue professional relationship (item 55)	4.09	4	1.05
Create group activities (item 61)	2.48	2	1.55
Detect barriers to supervision (item 51)	4.41	5	0.88
Discourage distractions (item 39)	4.56	5	0.80
Discuss how to give feedback (item 65)	4.57	5	0.80
Group supervision (item 60)	2.51	2	1.51
Include ethics (item 63)	4.69	5	0.68
Maintain positive rapport (item 58)	4.88	5	0.35
Meeting notes (item 69)	3.55	4	1.39
Observe body language (item 56)	4.42	5	0.88
Participate in peer review (item 72)	3.33	3	1.41
Peer evaluate (item 30)	2.24	2	1.20
Return communications within 48 hours (item 47)	4.83	5	0.44
Review literature (item 68)	4.30	5	0.91
Schedule contacts (item 57)	4.38	5	0.96
Schedule direct observations (item 66)	4.65	5	0.83
Schedule standing supervision appointments (item 67)	4.23	5	1.14
Seek mentorship (item 73)	3.68	4	1.08
Self-assess interpersonal skills (item 59)	4.51	5	0.86

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Table 4.4 (continued)

Send agenda (item 53)	2.66	3	1.45
Supervisory study groups (item 62)	2.38	2	1.44
Take baseline (item 50)	3.22	3	1.51

Figure 4.3 is a boxplot of the PECC categories along with the miscellaneous category. The intended audience for this research is behavior analysts, who are used to visual inspection of data. The box plot choice for visualization is ideal because it intuitively shows the PECC averages using the entire data range. The boxplot is comprised of four quartiles that represent the range of data denoted by the minimum, first quartile, median, third quartile, and maximum. The overall average of all of the behaviors (M=3.86). The black squares represent the averages for the individual behaviors. The open circles represent outliers for the individual behaviors.

Figure 4.4 is a boxplot of the individual behaviors. The intended audience for this research is behavior analysts, who are used to visual inspection of data. The box plot choice for visualization is ideal because it intuitively shows why supervision behaviors averages may or may not be significantly different because it displays the entire data range. The boxplot is comprised of four quartiles that represent the range of data denoted by the minimum, first quartile, median, third quartile, and maximum. The overall average of all of the behaviors is (M=3.97). The black squares represent the averages for the individual behaviors. The open circles represent outliers for the individual behaviors.
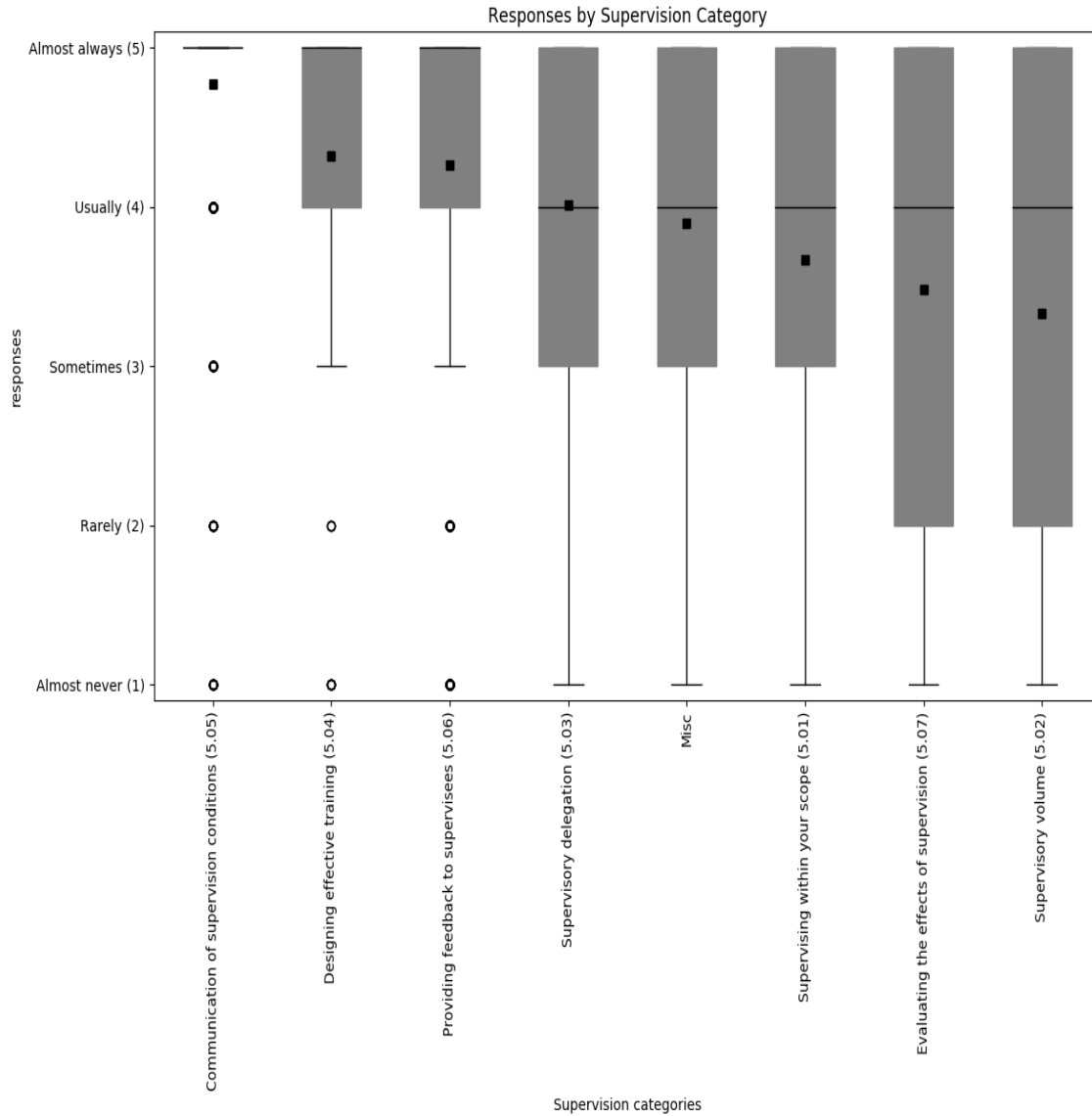
Figure 4.3 The y-axis represents survey responses ranging from 1 (Almost never perform the behavior) to 5 (Almost always perform the behavior). The boxplot for each PECC category and Misc. depicts the minimum, first quartile, median (black line), mean (black square), third quartile, maximum, and any outliers (circles) of the responses. The PECC categories on the x-axis are presented in descending order of means. Therefore, PECC categories on the left represent better performance while PECC categories on the right indicate need for improvement.
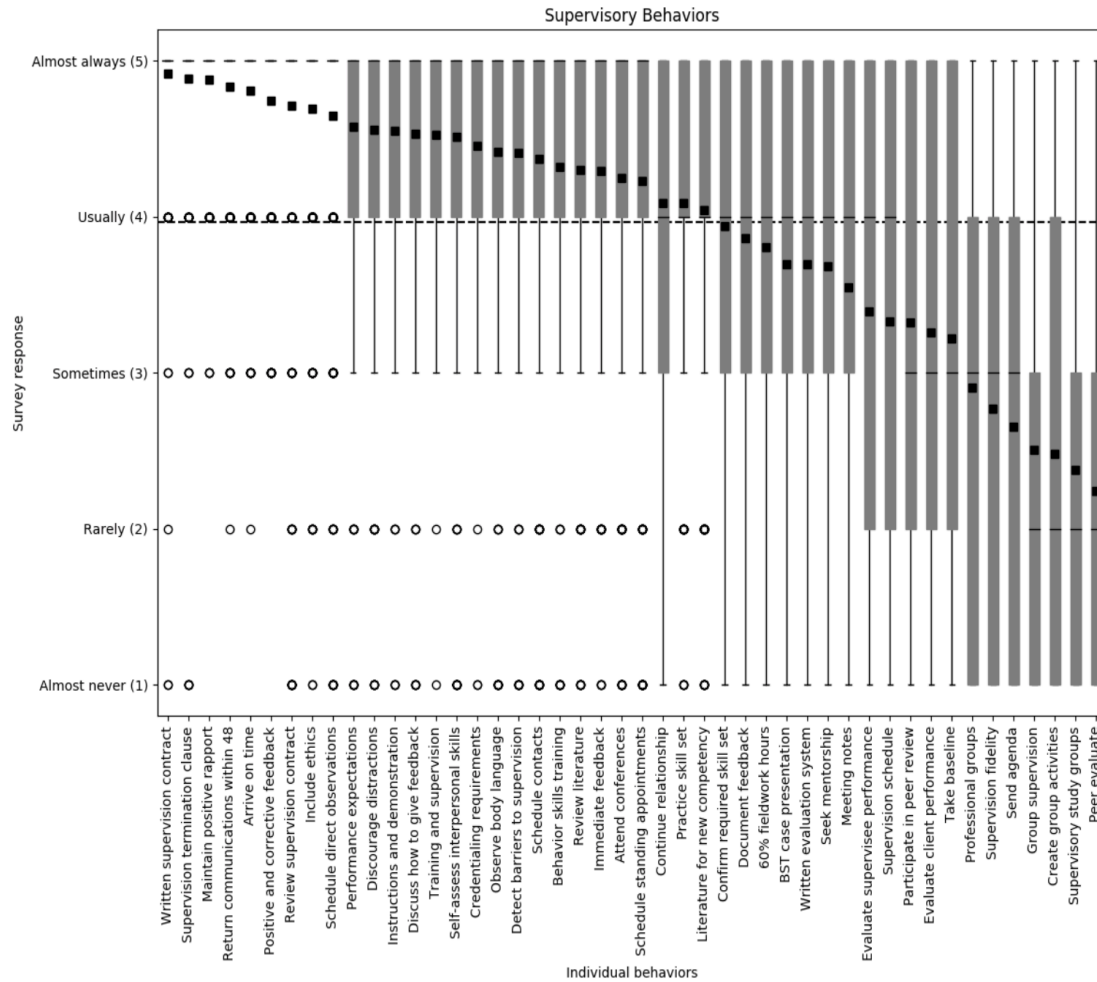
Figure 4.4 The y-axis represents survey responses ranging from 1 (Almost never perform the behavior) to 5 (Almost always   perform the behavior). The boxplot for each individual supervision behavior depicts the minimum, first quartile, median (black line), mean (black square), third quartile, maximum, and any outliers (circles) of the responses. The supervision behaviors on the x-axis are presented in descending order of means. Therefore, behaviors on the left represent better supervisor performance while behaviors on the right indicate need for improvement.

Are there significant differences between the means of participant responses for

PECC 5.0 and Miscellaneous Categories?

A one-way between groups ANOVA was conducted to compare the effect of 'supervision category' on PECC supervision survey responses. There was a significant effect of IV Supervision Category on DV PECC supervision survey responses at the p<.05 level [$F_{(7, 14558)} = 137.267$, $p < .001$]. Post hoc comparisons using the Tukey HSD

test indicated that the majority of the categories' mean scores were significantly different than each other at the p<.05 level (see Table 4.5). At the top end of the performance range, the mean score for category '5.05' (M =4.78) was significantly higher than all other categories. Just below the top, the categories '5.04' (M=4.32) and '5.06' (M=4.26) were statistically similar to each other at the p<.05 level (p=.900). Below this pair, '5.03' (M=4.01) and 'Misc.' (M=3.90) were also similar to each other at the p<.05 level (p=.367). Following this pair, '5.01' (M=3.67) was statistically different from all other categories at the p<.05 level. At the bottom end of the performance range, '5.07' (M=3.48) and '5.02' (M=3.33) were statistically similar to each other at the p<.05 level (p=.516). Table 4.5 contains the number of responses, mean, median, standard deviation, F statistic, p-value, and Tukey's HSD results. The median is included in table 4.5 as a measure of the center of the data that account for outliers that may skew the mean. For. Example, for 5.05 Communication of Supervision Conditions many respondents selected 5 *almost always,* but there were a few outliers selected 1 *almost never.* Consequently, the median was 5, but the mean was 4.78. The number in parentheses (e.g., (1), (2), (3), (4)) corresponds to that category's position in the Tukey HSD column. To read the Tukey HSD results for one category versus another, cross reference the row to the column for the categories in question. For example, to compare category 5.04 to 5.05, go to the row for 5.04 and cross reference column 1, corresponds to 5.05 (i.e., .900).

Table 4.5. ANOVA Results for PECC *5.0 Behavior Analyst as a Supervisor.*

Category	*n*	M	Mdn	SD	F	p	Tukey's HSD results						
							1	2	3	4	5	6	7
5.05 Com. of Sup. Conditns. (1)	1268	4.78	5.00	0.68	137.27	.000							
5.04 (2) Designing Effective Training	317	4.32	5.00	0.89			.900						
5.06 (3) Delivering Reinfmt.	1902	4.26	5.00	1.06			.468	.900					
5.03 (4) Super. Del.	634	4.01	4.00	1.00			.001*	.001*	.001*				
Misc. (5)	8082	3.90	4.00	1.37			.001*	.001*	.001*	.404			
5.01 Super. within Scope (6)	778	3.67	4.00	1.39			.001*	.001*	.001*	.001*	.001*		
5.07 Evaluating Effects of Super. (7)	1268	3.48	4.00	1.50			.001*	.001*	.001*	.001*	.001*	.052	
5.02 Super. Volume	317	3.33	4.00	1.51			.001*	.015*	.001*	.001*	.001*	.003*	.055

*significant correlations.

Are there significant differences between the means of participant responses for PECC 5.0 and Miscellaneous categories relative to supervisor demographics?

Research question three explores the relationship between different sub-groups of a demographic relative to PECC categories and miscellaneous category. The high number ran reflects the fact that I am searching for trends in the data, which could be further examined in future studies. These initial values should be interpreted cautiously because the larger number of results may include spurious correlations. However, I believe this

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analysis is important to direct supervision skill intervention to target demographics. Alternatively, a dimension reduction technique could be used to look for underlying correlations between the supervision behaviors. However, the underlying mechanism responsible for the correlation would be initially unknown. It would not facilitate direct supervision skill intervention to the demographic in need.

An ANOVA was run for fourteen demographics against each section of *5.0* PECC category and the miscellaneous category for a total of 112 tests. There was a significant difference found between the averages of 35 of the 112 (31.2%) of the PECC categories and the miscellaneous category relative to respondent demographics at the p <.05 level. At the alpha of 5%, I would expect approximately 6 of the 112 results to potentially be a Type I error (i.e., false positive for significance). However, I got 35 significant results. This means 29 of the 112 results could be significant. The Tukey's HSD post-hoc analysis revealed 29 significant results between the subgroups. Tables 4.6-4.13 contains the F statistic, p-value, and Tukey's HSD results for the 35 significant results in the PECC *5.0 Behavior Analyst* categories and the '*Miscellaneous*' category. Appendices C-J contain complete ANOVA tables with the number of responses, mean, median, standard deviation, p-value, and Tukey's HSD results for each PECC *5.0 Behavior Analyst* category and the '*Miscellaneous*' category.

PECC 5.01 Supervisory Competence

Table 4.6. *Significant Demographic Relationships for PECC 5.01*

Demographic	Sub-demographic comparison	F	p-value	Tukey HSD Result
Years supervisor	(5 years vs 0-2 years)	7.47	.000	.001
Job classification	(no significant relationships)	2.57	.019	n/a
Table 4.6 continued Place of employment	(Uni. vs Clinic)	6.26	.000	.005
	(Uni. vs Home)	6.26	.000	.001

Region	(Outside US vs Northeast)	2.79	.027	.048
Past 12 months candidates	(12 + vs 1-3)	3.55	.015	.032
Allotted hours	(16+ hrs/wk vs 6-10 hrs/wk)	4.16	.003	.036
	(16+ hrs/wk vs 0 hrs/wk)	4.16	.003	.013
Scheduled hours	(16+ hrs/wk vs 11-15 hrs/wk)	5.76	0.00	.039
	(16+ hrs/wk vs 0 hrs/wk)	5.76	0.00	.001
	(11-15 hrs/wk vs 1-5 hrs/wk)	5.76	0.00	.020
Number of clients	I do not provide consultation to clients/consumers vs 7-11 clients	3.16	. 014	.015
Who dictates caseload	(no significant relationships)	3.07	.048	n/a

Years supervisor. A one-way between groups ANOVA was conducted to compare the effect of 'years supervisor' on PECC 5.01 supervision survey responses. There was a significant effect of IV 'years supervisor' on DV PECC 5.01 Supervisory Competence at the $p<.05$ level [F (2, 314) =7.47, p=.001]. Post hoc comparisons using the Tukey HSD test indicated that the mean score for '0-2 years' as a supervisor (M=3.82) was significantly lower than the condition of '>5 years' as a supervisor (M=4.14) at the $p<.05$ level (p=.001). However, no significant differences were found among the other conditions.

Job classification. A one-way between groups ANOVA was conducted to compare the effect of 'job classification' on PECC 5.01 Supervisory Competence supervision survey responses. There was a significant effect of IV 'place of employment' on DV PECC 5.01 Supervisory Competence at the $p<.05$ level [F (6, 310) =2.57, p=.019]. Post hoc comparisons using the Tukey HSD test indicated that there were no significant differences between the conditions. However, the largest difference in means was between 'researcher' (M=4.60) and 'behavior analyst' (M=3.94) with p=.118. While no significant relationship was found, this suggests that supervisors who work as researchers

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are reporting higher frequencies of supervising within their scope than supervisors who are behavior analysts.

Place of employment. A one-way between groups ANOVA was conducted to compare the effect of 'place of employment' on PECC 5.01 Supervisory Competence supervision survey responses. There was a significant effect of IV 'place of employment' on DV PECC 5.01 Supervisory Competence at the $p<.05$ level [$F (3, 313) =6.26, p<.001$]. Post hoc comparisons using the Tukey HSD test indicated that the mean score for 'university' (M=4.33) was significantly higher than the place of employment of 'clinic' (M=3.93) at the $p<.05$ level (p=.005). Also, the mean score for 'university' (M=4.33) was significantly higher than the place of employment of 'home-based' (M=3.85) at the $p<.05$ level (p=.001). However, no significant differences were found among the other places of employment. This suggests supervisors at universities are reporting higher frequencies of supervising within their scope than supervisors in clinic or home-based settings.

Region. A one-way between groups ANOVA was conducted to compare the effect of 'region' on PECC 5.01 Supervisory Competence supervision survey responses. There was a significant effect of IV 'region' on DV PECC 5.01 Supervisory Competence at the $p<.05$ level [$F (4, 310) =2.79, p=0.027$]. Post hoc comparisons using the Tukey HSD test indicated that the mean score for the 'northeast' region (M=3.78) was significantly different than the 'outside the US' region (M=4.20) at the $p<.05$ level (p=.048). However, no significant differences were found among the other regions. This result suggests supervisors outside the United States are reporting higher frequencies of

supervising within their scope than supervisors in the northeast region of the United States.

Past 12 months candidates. A one-way between groups ANOVA was conducted to compare the effect of 'past 12 months candidates' on PECC 5.01 Supervisory Competence supervision survey responses. There was a significant effect of IV Number of candidates on DV PECC 5.01 Supervisory Competence at the $p<.05$ level [$F_{(3, 313)} =3.55$, $p=.015$]. Post hoc comparisons using the Tukey HSD test indicated that the mean score for the '12+ candidates' (M=4.35) was significantly higher than the '1-3 candidates' (M=3.94) at the $p<.05$ level ($p=.032$). However, no significant differences were found among the other amounts of candidates. This result suggests supervisors who see more candidates (12+) are reporting higher frequencies of supervising within their scope than supervisors with fewer candidates (1-3).

Allotted hours. A one-way between groups ANOVA was conducted to compare the effect of 'allotted hours' on PECC 5.01 Supervisory Competence supervision survey responses. There was a significant effect of IV 'allotted hours' on DV PECC 5.01 Supervisory Competence at the $p<.05$ level [$F_{(4, 312)} =4.16$, $p<.003$]. Post hoc comparisons using the Tukey HSD test indicated that the mean score for '16+ hours per week' (M=4.34) was significantly higher than two other conditions: '0 hours' (M=3.93, $p=.036$) and '1-5 hours' (M=3.91, $p=.013$). However, no significant differences were found among the other conditions. This result suggests supervisors who allot more hours for supervision '16+ hours' are reporting higher frequencies of supervising within their scope than supervisors who allot fewer hours '0 hours and 1-5 hours'.

Scheduled hours. A one-way between groups ANOVA was conducted to compare the effect of 'scheduled hours' on PECC 5.01 Supervisory Competence supervision survey responses. There was a significant effect of IV 'scheduled hours' on DV PECC 5.01 Supervisory Competence at the $p<.05$ level [$F_{(4, 312)} =5.76, p<.001$]. Post hoc comparisons using the Tukey HSD test indicated that the mean score for '16+ hours per week' (M=4.48) was significantly higher than two other conditions: '1-5 hours per week' (M=3.90, p=.015) and '6-10 hours per week' (M=4.03, p=.039). A significant difference was also found between '11-15 hours per week' (M=4.25) and '1-5 hours per week' (M=3.90) at the $p<.05$ level (p=.020). This result suggests supervisors who schedule more hours for supervision '16+ hours' and '11-15 hours' are reporting higher frequencies of supervising within their scope than supervisors who allot fewer hours.

Number of clients. A one-way between groups ANOVA was conducted to compare the effect of 'number of clients' on PECC 5.01 Supervisory Competence supervision survey responses. There was a significant effect of IV 'number of clients' on DV PECC 5.01 Supervisory Competence at the $p<.05$ level [$F_{(4, 312)} =3.16, p<.014$]. Post hoc comparisons using the Tukey HSD test indicated that the mean score for 'I do not provide consultation to clients/consumers' (M=4.28) was significantly higher than for '7-11' clients (M=3.90) at the $p<.05$ level (p=.015). However, no significant differences were found among the other conditions. This result suggests supervisors who do not provide consultation to clients are reporting higher frequencies of supervising within their scope than supervisors who see over 12 clients.

Who dictates caseload. A one-way between groups ANOVA was conducted to compare the effect of 'who dictates caseload' on PECC 5.01 Supervisory Competence

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supervision survey responses. There was a significant effect of IV 'place of employment' on DV PECC 5.01 Supervisory Competence at the p<.05 level [F (2, 314) =3.07, p=.048]. Post hoc comparisons using the Tukey HSD test indicated that there were no significant differences between the conditions. However, the largest difference in means was between 'I do not provide consultation to clients/consumers' (M=4.18) and 'Employer' (M=3.92) with p=.090. While no significant relationship was found, this suggests that supervisors who do not provide consultation reported higher frequencies of supervising within their scope than supervisors who have a caseload dictated by an employer.

PECC 5.02 Supervisory Volume

Table 4.7. *Significant Demographic Relationships for PECC 5.02*

Demographic	Sub-demographic comparison	F	p-value	Tukey HSD Result
Area of study	(Counseling vs other)	5	.000	.010
	(Psychology vs other)	5	.000	.000
	(Education vs other)	5	.000	.000
	(Behavior analysis vs other)	5	.000	.000
Place of employment	(University vs clinic)	4.4	.005	047
	(University vs home-based)	4.4	.005	.031
Allotted hours	(1-5 hrs/wk vs 0 hrs/wk)	3.34	.011	.004
Scheduled hours	(11-15 hrs/wk vs 1-5 hrs/wk)	2.76	.028	.046
Number of clients	(Don't provide vs 12+)	2.52	.041	.021
	(Don't provide vs 7-11)	2.52	.041	.039
Who dictates caseload	(Do not provide consultation vs self)	5.53	.004	.047
	(Do not provide consultation vs employer)	5.53	.004	.004
RBT supervision	(No superv. vs 5% RBT superv)	2.8	.026	.015

Area of study. A one-way between groups ANOVA was conducted to compare the effect of 'area of study' on PECC 5.02 Supervisory Volume supervision survey responses. There was a significant effect of IV 'area of study' on DV PECC 5.02

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Supervisory Volume at the p<.05 level [F (4, 312) =5.0, p=.001]. Post hoc comparisons using the Tukey HSD test indicated that the mean score for 'Other' (M=2.04) was significantly lower than all four other conditions: 'counseling' (M=3.56, p=.010), 'Psychology' (M=3.49, p=.001), 'education' (M=3.43, p=.001), and 'behavior analysis' (M=3.39, p=.001). No other significant differences between conditions were found. This result suggests supervisors whose area of study is 'other' reported a significantly lower frequency than the other areas of study for behaviors associated with supervisory volume.

Place of employment. A one-way between groups ANOVA was conducted to compare the effect of 'place of employment' on PECC 5.02 Supervisory Volume supervision survey responses. There was a significant effect of IV Place of employment on DV PECC 5.02 Supervisory Volume at the p<.05 level [F (3, 313) =4.4, p=.005]. Post hoc comparisons using the Tukey HSD test indicated that the mean score for 'university' (M=3.93) was significantly higher than two other conditions: 'clinic' (M=3.09, p=.047) and 'home-based' (M=3.05, p=.031). No other significant differences between conditions were found. This result suggests supervisors employed in universities reported a significantly higher frequency than supervisors in clinic and home-based settings for behaviors associated with supervisory volume.

Allotted hours. A one-way between groups ANOVA was conducted to compare the effect of 'allotted hours' on PECC 5.02 Supervisory Volume supervision survey responses. There was a significant effect of IV 'allotted hours' on DV PECC 5.02 Supervisory Volume at the p<.05 level [F (4, 312) =3.34, p=.011]. Post hoc comparisons using the Tukey HSD test indicated that the mean score for '0 hours' (M=2.78) was significantly lower than '1-5 hours' (M=3.53, p=.004). No other significant differences

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between conditions were found. This result suggests supervisors who allot 1-5 hours per week report a higher frequency than supervisors who report allotting 0 hours per week for behaviors associated with supervisory volume.

Scheduled hours. A one-way between groups ANOVA was conducted to compare the effect of 'scheduled hours; on PECC 5.02 Supervisory Volume supervision survey responses. There was a significant effect of IV 'scheduled hours' on DV PECC 5.02 Supervisory Volume at the $p<.05$ level [$F (4, 312) =2.76$, $p=0.028$]. Post hoc comparisons using the Tukey HSD test indicated that the mean score for '11-15 hours a week' ($M=4.04$) was significantly higher than '1-5 hours a week' ($M=3.17$, $p=.046$). No other significant differences between conditions were found. This result suggests supervisors who schedule '11-15 hours' a week reported a higher frequency than supervisors reporting '1-5 hours' a week for behaviors associated with supervisory volume.

Number of clients. A one-way between groups ANOVA was conducted to compare the effect of 'number of clients' on PECC 5.02 Supervisory Volume supervision survey responses. There was a significant effect of IV 'number of clients' on DV PECC 5.02 Supervisory Volume at the $p<.05$ level [$F (4, 312) =2.52$, $p=0.041$]. Post hoc comparisons using the Tukey HSD test indicated that the mean score for 'I do not provide consultation to clients' ($M=4.24$) was significantly higher than both '12+ clients' ($M=3.26$, $p=.021$) and '7-11 clients' ($M=3.23$, $p=.039$). No other significant differences between conditions were found. This result suggests supervisors who do not see clients reported a significantly higher frequency than supervisors who see over seven clients a week for behaviors associated with supervisory volume.

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Who dictates caseload. A one-way between groups ANOVA was conducted to compare the effect of 'who dictates caseload' on PECC 5.02 Supervisory Volume supervision survey responses. There was a significant effect of IV 'who dictates caseload' on DV PECC 5.02 Supervisory Volume at the $p<.05$ level [$F_{(2, 314)} = 5.53$, $p=0.004$]. Post hoc comparisons using the Tukey HSD test indicated that the mean score for 'I do not provide consultation to clients' (M=4.22) was significantly higher than both 'self' (M=3.41, p=.047) and 'employer' (M=3.15, p=.004). No other significant differences between conditions were found. This result suggests supervisors who do not see clients reported a significantly higher frequency than supervisors who either control their own caseloads or have their caseload managed by an employer for behaviors associated with supervisory volume.

RBT supervision %. A one-way between groups ANOVA was conducted to compare the effect of 'RBT supervision %' on PECC 5.02 Supervisory Volume supervision survey responses. There was a significant effect of IV RBT supervision % on DV PECC 5.02 Supervisory Volume at the $p<.05$ level [$F_{(4, 312)} = 2.8$, $p=0.026$]. Post hoc comparisons using the Tukey HSD test indicated that the mean score for 'I do not supervise RBTs' (M=3.60) was significantly higher than '5% of patient direct services' (M=2.84, p=.015). No other significant differences between conditions were found. This result suggests supervisors who do not supervise RBTs reported a significantly higher frequency than supervisors who supervise 5% of their patient's direct services for behaviors associated with supervisory volume.

PECC 5.03 Supervisory Delegation

Table 4.8. *Significant Demographic Relationships for PECC 5.03*

Demographic	Sub-demographic comparison	F	p-value	Tukey HSD Result
Number of candidates	(no significant relationships)	2.81	.040	n/a
Allotted hours	(no significant relationships)	2.89	.022	n/a
Scheduled hours	(no significant relationships)	2.87	.023	n/a

Number of candidates. A one-way between groups ANOVA was conducted to compare the effect of 'number of candidates' on PECC 5.03 Supervisory Delegation supervision survey responses. There was a significant effect of IV 'number of candidates' on DV PECC 5.03 Supervisory Delegation at the $p<.05$ level [$F_{(3, 313)} = 2.81$, $p = 0.04$]. Despite the significant one-way ANOVA result, post hoc comparisons using the Tukey HSD test did not indicate any significant differences between the groups. The largest difference was between '12+ candidates' (M=4.83) and '7-11 candidates' (M=3.50), but the $p<.05$ level was not achieved (p=.068).

Allotted hours. A one-way between groups ANOVA was conducted to compare the effect of 'allotted hours' on PECC 5.03 Supervisory Delegation supervision survey responses. There was a significant effect of IV 'allotted hours' on DV PECC 5.03 Supervisory Delegation at the $p<.05$ level [$F_{(4, 312)} = 2.89$, $p = .022$]. Despite the significant one-way ANOVA result, post hoc comparisons using the Tukey HSD test did not indicate any significant differences between the groups. The largest difference was between '16+ hours a week' (M=4.42) and '1-5 hours a week' (M=3.92), but the $p<.05$ level was not achieved (p=.096).

Scheduled hours. A one-way between groups ANOVA was conducted to compare the effect of 'scheduled hours' on PECC 5.03 Supervisory Delegation

supervision survey responses. There was a significant effect of IV 'scheduled hours' on DV PECC 5.03 Supervisory Delegation at the $p<.05$ level [$F (4, 312) =2.87$, $p=.023$]. Despite the significant one-way ANOVA result, post hoc comparisons using the Tukey HSD test did not indicate any significant differences between the groups. The largest difference was between '16+ hours' (M=4.39) and '0 hours' (M=3.50), but the $p<.05$ level was not achieved (p=.399).

PECC 5.04 Designing Effective Supervision and Training

Table 4.9. *Significant Demographic Relationships for PECC 5.04*

Demographic	Sub-demographic comparison	F	p-value	Tukey HSD result
Number of candidates	(12+ candidates vs 7-11 candidates)	5.83	.000	.008
	(4-7 candidates vs 7-11 candidates)	5.83	.000	.001
	(1-3 candidates vs 7-11 candidates)	5.83	.000	.001
RBT supervision %	(20% supervision vs 5% supervision)	3.07	.017	.013
	(Do not provide vs 5% supervision)	3.07	.017	.035

Number of candidates. A one-way between groups ANOVA was conducted to compare the effect of 'number of candidates' on PECC 5.04 Designing Effective Supervision and Training supervision survey responses. There was a significant effect of IV 'number of candidates' on DV PECC 5.04 Designing Effective Supervision and Training at the $p<.05$ level [$F (4, 312) =5.83$, $p=.001$]. Post hoc comparisons using the Tukey HSD test indicated that the mean score for '7-11' candidates' (M=3.12) was significantly lower than the '12+ candidates' (M=5.00, p=.008), '4-7 candidates' (M=4.39, p=.001), and '1-3 candidates' (M=4.33, p=.001) at the $p<.05$ level. No other significant differences were found. This result suggests supervisors with '7-11

candidates' reported a significantly lower frequencies than supervisors with fewer candidates or '12+ candidates' for behaviors associated with designing effective training.

RBT supervision. A one-way between groups ANOVA was conducted to compare the effect of 'RBT supervision' on PECC 5.04 Designing Effective Supervision and Training supervision survey responses. There was a significant effect of IV 'RBT supervision' on DV PECC 5.04 at the p<.05 level [F (4, 312) =3.07, p=.017]. Post hoc comparisons using the Tukey HSD test indicated that the mean score for '5% of patient services' (M=3.98) was significantly lower than '20% of patient direct services' (M=4.56, p=.013) and 'I do not supervise' (M=4.39, p= .035) at the p < .05 level. No other significant differences between conditions were found. This result suggests supervisors who provide 5% RBT supervision reported a significantly lower frequency than supervisors who supervise 20% of RBT supervision or who do not supervise for behaviors associated with supervisory volume.

PECC 5.05 Communication of Supervision Conditions

Table 4.10. *Significant Demographic Relationships for PECC 5.05*

Demographic	Sub-demographic comparison	F	p-value	Tukey HSD result
Job classification	(Teacher vs counselor)	3.11	.006	.018
	(Researcher vs counselor)	3.11	.006	.003
	(Professor vs counselor)	3.11	.006	.001
	(Other vs counselor)	3.11	.006	.002
	(Behavior analyst vs counselor)	3.11	.006	.002
	(Psychologist vs counselor)	3.11	.006	.019
Supervision format	(Group & Individual fldwk. vs Group)	6.01	0.00	.001
	(Intensive practicum vs group)	6.01	0.00	.001
	(Individual fieldwork vs group)	6.01	0.00	.001
Number of candidates	(12+ vs 7-11)	7.47	0.00	.012
	(4-7 vs 7-11)	7.47	0.00	.001

Table 4.10 (continued)				
	(1-3 vs 7-11)	7.47	0.00	.001
RBT Supervision %	(no significant relationships)	2.45	.046	n/a

Job classification. A one-way between groups ANOVA was conducted to compare the effect of 'job classification' on PECC 5.05 Communication of Supervision Conditions supervision survey responses. There was a significant effect of IV 'job classification' on DV PECC 5.05 Communication of Supervision Conditions at the $p<.05$ level [$F (6, 310) =3.11$, $p=0.006$]. Post hoc comparisons using the Tukey HSD test indicated that the mean score for 'counselor' (M=3.50) was significantly lower at the $p<.05$ level than all other categories: 'teacher' (M=5.00, p=.018), 'researcher' (M=4.95, p=.003), 'professor' (M=4.89, p=.001), 'other' (M=4.81, p=.002), 'behavior analyst' (M=4.78, p=.002), and 'psychologist' (M=4.67, p=.019). No other significant differences between job classifications were found. This result suggests supervisors who counselors reported a significantly lower frequency than all other job types for behaviors associated with communication of supervision conditions.

Supervision format. A one-way between groups ANOVA was conducted to compare the effect of 'supervision format' on PECC 5.05 Communication of Supervision Conditions supervision survey responses. There was a significant effect of IV 'supervision format' on DV PECC 5.05 Communication of Supervision Conditions at the $p<.05$ level [$F (3, 313) =6.01$, $p=0.001$]. Post hoc comparisons using the Tukey HSD test indicated that the mean score for 'group fieldwork' (M=3.50) was significantly lower at the $p<.05$ level than all other categories: 'group and individual fieldwork' (M=4.83, p=.001), 'intensive practicum' (M=4.81, p=.001), and 'individual fieldwork' (M=4.75, p=.001) No other significant differences between job classifications were found. This

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result suggests supervisors who use a group fieldwork format reported a significantly lower frequency than all other supervision formats for behaviors associated with communication of supervision conditions.

Number of candidates. A one-way between groups ANOVA was conducted to compare the effect of 'number of candidates' on PECC 5.05 Communication of Supervision Conditions supervision survey responses. There was a significant effect of IV Number of candidates on DV PECC 5.05 Communication of Supervision Conditions at the $p<.05$ level [$F (3, 313) = 7.47, p<.001$]. Post hoc comparisons using the Tukey HSD test indicated that the mean score for '7-11 candidates' (M=4.06) was significantly lower at the $p<.05$ level than all three other categories of '12+ candidates' (M=5.00, p=.012), '4-7 candidates' (M=4.84, p=.001), and '1-3 candidates' (M=4.78, p=.001). No other significant differences between conditions were found. This result suggests supervisors who supervise '7-11' candidates reported significantly lower frequency than supervisors with '1-3', '4-7', and '12+' candidates for behaviors associated with communication of supervision conditions.

RBT Supervision %. A one-way between groups ANOVA was conducted to compare the effect of 'RBT supervision %' on PECC 5.05 Communication of Supervision Conditions supervision survey responses. There was a significant effect of IV 'place of employment' on DV PECC 5.05 Communication of Supervision Conditions at the $p<.05$ level [$F (4, 312) = 2.45, p=.046$]. Post hoc comparisons using the Tukey HSD test indicated that there were no significant differences between the conditions. However, the largest difference in means was between 'I do not supervise RBTS' (M=4.86) and '15% of patient direct services' (M=4.63) with p=.050. While no significant relationship

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was found, this result suggests that supervisors who do not supervise RBTs may report a higher frequency than supervises who supervise 15% of a patient's direct services with behaviors associated with communication of supervision conditions.

PECC 5.06 Providing Feedback to Supervisees

Table 4.11. *Significant Demographic Relationships for PECC 5.06*

Demographic	Sub-demographic comparison	F	p-value	Tukey HSD Result
Number of candidates	(12 + vs 7-11)	4.07	.007	.015
	(4-7 vs 8-11)	4.07	.007	.037
Scheduled hours	(16+ hrs a wk vs 1-5 hrs/wk)	4.45	.002	.021
	(16 + hrs/wk vs 0 hrs/wk)	4.45	.002	.028

Number of candidates. A one-way between groups ANOVA was conducted to compare the effect of 'number of candidates' on PECC 5.06 Providing Feedback to Supervisees supervision survey responses. There was a significant effect of IV 'number of candidates' on DV PECC 5.06 Providing Feedback to Supervisees at the p<.05 level [F (3, 313) =4.07, p=.007]. Post hoc comparisons using the Tukey HSD test indicated that the mean score for '7-11 candidates' (M=3.79) was significantly lower at the p<.05 level than both '12+ candidates' (M=4.94, p=.015) and '4-7 candidates' (M=4.37, p=.037). No other significant differences between conditions were found. This result suggests supervisors who supervise '7-11' candidates reported significantly lower frequency than supervisors with '1-3' and '4-7' candidates for behaviors associated with providing feedback to supervisees.

Scheduled hours. A one-way between groups ANOVA was conducted to compare the effect of 'scheduled hours' on PECC 5.06 Providing Feedback to Supervisees supervision survey responses. There was a significant effect of IV 'scheduled

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hours' on DV PECC 5.06 Providing Feedback to Supervisees at the p<.05 level [F (4, 312) =4.45, p=.002]. Post hoc comparisons using the Tukey HSD test indicated that the mean score for '16+ hours a week' (M=4.67) was significantly higher at the p<.05 level than both '1-5 hours a week' (M=4.19, p=.021) and '0 hours' (M=3.61, p=.028). No other significant differences between conditions were found. This result suggests supervisors who schedule more hours a week reported significantly higher frequency than supervisors who scheduled less hours for behaviors associated with Providing Feedback to Supervisees.

PECC 5.07 Evaluating Effects of Supervision

Table 4.12. *Significant Demographic relationships for PECC 5.07*

Demographic	Sub-demographic comparison	F	p-value	Tukey HSD Result
Scheduled hours	(16+ hrs a wk vs 1-5 hrs/wk)	3.85	.005	.009

Scheduled hours. A one-way between groups ANOVA was conducted to compare the effect of 'scheduled hours' on PECC 5.07 Evaluating Effects of Supervision supervision survey responses. There was a significant effect of IV 'scheduled hours' on DV PECC 5.07 Evaluating Effects of Supervision at the p<.05 level [F (4, 312) =3.85, p=.005]. Post hoc comparisons using the Tukey HSD test indicated that the mean score for '16+ hours a week' (M=4.29) was significantly higher at the p<.05 level than '1-5 hours a week' (M=3.37, p=.009). No other significant differences between conditions were found. This result suggests supervisors who schedule more hours a week reported a significantly higher frequency than supervisors who scheduled less hours for behaviors associated with evaluating the effects of supervision.

Miscellaneous

Table 4.13. *Significant Demographic Relationships for Miscellaneous*

Demographic	Sub-demographic comparison	F	p-value	Tukey HSD Result
Area of study	(Behavior vs Other)	3.32	.011	.011
Region Table 4.13 (continued)	(Midwest vs Northeast)	2.63	.035	.019
Supervision format	(Group and Ind. vs Ind.)	7.12	0.00	.001
	(Group and Ind. vs Group)	7.12	0.00	.047
Number of clients	(12 + vs 7-11)	5.73	0.00	.016
Past 12 months of candidates	(12 + vs 1-3)	3.63	.013	.011
Allotted hours	(16+ hrs/wk vs 1-5 hrs/wk)	5.46	0.00	.034
	(6-10 hrs/wk vs 0 hrs/wk)	5.46	0.00	.011
Scheduled hours	(16+ hrs/wk vs 6-10 hrs/wk)	8.75	0.00	.044
	(16+ hrs/wk vs 1-5 hrs/wk)	8.75	0.00	.044
	(11-15hrs/wk vs 1-5 hrs/wk)	8.75	0.00	.044
	(16+ hrs/wk vs 0 hrs/wk)	8.75	0.00	.038

Area of study. A one-way between groups ANOVA was conducted to compare the effect of 'area of study' on MISC supervision survey responses. There was a significant effect of IV 'area of study' on DV MISC at the p<.05 level [F (4, 312) =3.32, p=.011]. Post hoc comparisons using the Tukey HSD test indicated that the mean score for 'behavior analysis' (M=3.96) was significantly higher than 'Other' (M=3.65) at the p<.05 level (p=.015). No other significant differences between areas of study were found. This result suggests supervisors who studied behavior analysis reported a significantly higher frequency than supervisors who studied 'other' topics for miscellaneous supervision behaviors.

Region. A one-way between groups ANOVA was conducted to compare the effect of 'region' on MISC supervision survey responses. There was a significant effect of IV State on DV MISC at the p<.05 level [F (4, 310) =2.63, p=.035]. Post hoc

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comparisons using the Tukey HSD test indicated that the mean score for the 'midwest' region (M=4.03) was significantly higher at the p<.05 level than the 'northeast' region (M=3.77, p=.019). No other significant differences between regions were found. This result suggests supervisors in the 'midwest' region reported a significantly higher frequency than supervisors in the northeast region for miscellaneous supervision behaviors.

Supervision format. A one-way between groups ANOVA was conducted to compare the effect of 'supervision format' on MISC supervision survey responses. There was a significant effect of IV 'supervision format' on DV MISC at the p<.05 level [F (3, 313) =7.12, p<.001]. Post hoc comparisons using the Tukey HSD test indicated that the mean score for the 'group and individual fieldwork' format (M=4.01) was significantly higher at the p<.05 level than both the 'individual' format (M=3.81, p=.001) and the 'Group' format (M=3.23, p=.047). No other significant differences between supervision formats were found. This result suggests supervisors using the combination of group and individual fieldwork reported a significantly higher frequency than supervisors using the individual or group formats separately for miscellaneous supervision behaviors.

Number of candidates. A one-way between groups ANOVA was conducted to compare the effect of 'number of candidates' on MISC supervision survey responses. There was a significant effect of IV 'number of candidates' on DV MISC at the p<.05 level [F (3, 313) =5.73, p=.001]. Post hoc comparisons using the Tukey HSD test indicated that the mean score for '12+ candidates' (M=4.50) was significantly higher at the p<.05 level than both '1-3 candidates' (M=3.85, p=.044) and '7-11 candidates' (M=3.65, p=.016). Also, the mean score for '4-7 candidates' (M=4.03) was significantly

higher than '1-3 candidates' (M=3.85, p=.022). This result suggests supervisors with 12+ candidates report a significantly higher frequency than supervisors with '1-3' or '7-11' candidates for miscellaneous supervision behaviors.

Past 12 months candidate. A one-way between groups ANOVA was conducted to compare the effect of 'past 12 months candidates' on MISC supervision survey responses. There was a significant effect of IV 'past 12 months candidates' on DV MISC at the p<.05 level [F (3, 313) =3.63, p=.013]. Post hoc comparisons using the Tukey HSD test indicated that the mean score for '12+ candidates' (M=4.20) was significantly higher than '1-3 candidates' (M=3.85) at the p<.05 level (p=.011). No other significant differences between conditions were found. This result suggests supervisors with '12+ candidates' in the past twelve months reported a significantly higher frequency than supervisors with '1-3 candidates' in the past twelve months for miscellaneous supervision behaviors.

Allotted hours. A one-way between groups ANOVA was conducted to compare the effect of 'allotted hours' on MISC supervision survey responses. There was a significant effect of IV 'allotted hours' on DV MISC at the p<.05 level [F (4, 312) =5.46, p<.001]. Post hoc comparisons using the Tukey HSD test indicated that the mean score for the '16+ hours a week' format (M=4.16) was significantly higher than the '1-5 hours a week' (M=3.86) at the p<.05 level (p=.015) Additionally, the mean score for '6-10 hours a week' (M=4.01) was significantly higher than '0 hours' (M=3.56) at the p<.05 level (p=.011). This result suggests supervisors who allot more hours a week reported a significantly higher frequency than supervisors who allot less hours for miscellaneous supervision behaviors.

Scheduled hours. A one-way between groups ANOVA was conducted to compare the effect of 'scheduled hours' on MISC supervision survey responses. There was a significant effect of IV 'scheduled hours' on DV MISC at the $p<.05$ level [$F_{(4, 312)} = 8.75$, $p<.001$]. Post hoc comparisons using the Tukey HSD test indicated that the mean score for '16+ hours' (M=4.30) was significantly higher at the $p<.05$ level than '6-10 hours a week' (M=3.97, p=.044), '1-5 hours a week' (M=3.80, p=.034), and '0 hours' (M=3.56, p=.038). Additionally, the mean score for '11-15 hours a week' (M=4.11) was significantly higher than '1-5 hours a week' (M=3.80) at the $p<.05$ level p=.004). This result suggests supervisors who schedule more hours ('11-15' and '16+') reported a significantly higher frequency than supervisors who schedule less hours for miscellaneous supervision behaviors.

Are there correlations in certification outcomes relative to supervisors reported individual supervision behaviors?

A Spearman correlation test (January 2019) was run to determine how individual supervision practices correlate with the reported percentage of candidates who passed the BACB exam (i.e., I ran a Spearman correlation of each individual supervisor behavior versus the reported percentage of candidates that passed BACB exam for each supervisor). The Spearman correlation did not make assumptions about normal distributions; therefore, it was better able to account for discrete variables. The rho is a correlation coefficient that represents how closely the data aligns with the line of best fit. A rho of 1.00 represents perfect positive correlation. A rho of -1.00 represents a perfect negative correlation. A rho of 0.00 represents no correlation. The closer the coefficient is

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to 1 indicates a stronger correlation. Table 4.14 shows 7 of the 46 (15.2%) individual

behaviors were significantly correlated to higher PS pass rates.

Table 4.14. *Spearman Correlation*

Item	rsp	p-value
Literature for new competency area (item 19)	.039	.589
Professional groups (item 20)	.041	.571
Outside training area-credentialing requirements (item 22)	.353*	.027*
Supervision schedule (item 32)	.022	.763
Outside training area-training and supervision (item 23)	.350*	.029*
Schedule contacts (item 57)	.087	.235
60% fieldwork hours (item 26)	-.038	.602
Confirm required skill set (item 17)	.037	.614
Practice skill set (item 34)	.177*	.015*
Behavior skills training (item 38)	-.044	.550
Written supervision contract (item 35)	-.013	.862
Supervision termination clause (item 37)	-.024	.746
Performance expectations (item 41)	-.064	.383
Instructions and demonstration (item 49)	.122	.094
Positive and Corrective feedback (item 36)	-.004	.958
Written evaluation system (item 42)	.028	.698
Document feedback (item 44)	.030	.676
Immediate feedback (item 54)	.075	.302
Evaluate supervisee performance (item 40)	-.072	.322
Evaluate client performance (item 46)	-.160*	.028*
Supervision fidelity (item 48)	-.072	.326
Peer evaluate (item 30)	-.120	.099
Take baseline (item 50)	.002	.976
Detect barrier to supervision (item 51)	.119	.102
BST case presentation (item 52)	.071	.333
Send agenda (item 53)	.047	.524
Meeting notes (item 69)	.011	.882
Return communications within 48 hours (item 47)	-.025	.731
Discourage distractions (item 39)	.038	.604
Observe body language (item 56)	.050	.490
Maintain positive rapport (item 58)	-.041	.576
Self-assess interpersonal skills (item 59)	.086	.239
Group supervision (item 60)	.009	.903
Create group activities (item 61)	.066	.365
Include ethics (item 63)	.186*	.010*
Arrive on time (item 64)	.052	.479
Discuss how to give feedback (item 65)	.106	.146
Schedule direct observations (item 66)	.125	.085
Schedule standing supervision appointments (item 67)	.049	.504
Continue professional relationship (item 55)	.055	.450
Review literature (item 68)	.196*	.007*
Attend conferences (item 70)	.159*	.028*
Participate in peer review (item 72)	.172	.084
Seek mentorship (item 73)	.061	.401
Supervisory study groups (item 62)	.029	.689
*significant correlations.		

Outside Training Area: Credentialing Requirements

A Spearman correlation was computed to assess the relationship between the

behavior of 'outside training area-credentialing requirements' and the supervisee pass

rate. There was a correlation between the two variables [r=.353, p=.027]. Higher self-reported survey responses of outside training area-credentialing requirements were correlated with higher supervisee pass rates.

Outside Training Area: Training and Supervision

A Spearman correlation was computed to assess the relationship between the behavior of 'outside training area-training and supervision' and the supervisee pass rate. There was a correlation between the two variables [r=.350, p=.029]. Higher self-reported survey responses of seeking outside training and supervision for new areas of practice were correlated with higher supervisee pass rates.

Practice Skill Set

A Spearman correlation was computed to assess the relationship between the behavior of 'practice skill set' and the supervisee pass rate. There was a correlation between the two variables [r=.177, p=.015]. Higher self-reported survey responses of confirming skill set were correlated with higher supervisee pass rates.

Evaluate Client Performance

A Spearman correlation was computed to assess the relationship between the behavior of 'evaluate client performance' and the supervisee pass rate. There was a correlation between the two variables [r= - .160, p=.028]. Higher self-reported survey responses of evaluating client performance were correlated with lower supervisee pass rates.

Include Ethics

A Spearman correlation was computed to assess the relationship between the behavior of 'include ethics' and the supervisee pass rate. There was a correlation between

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the two variables [r=.186, p=.010]. Higher self-reported survey responses of including ethics were correlated with higher supervisee pass rates.

Reviewing Literature

A Spearman correlation was computed to assess the relationship between the behavior of 'review literature' and the supervisee pass rate. There was a correlation between the two variables [r=.196, p=.007]. Higher self-reported survey responses of reviewing literature were correlated with higher supervisee pass rates.

Attend Conferences

A Spearman correlation was computed to assess the relationship between the behavior of 'attend conferences' and the supervisee pass rate. There was a correlation between the two variables [r=0.159, p=.028]. Higher self-reported survey responses of attending conferences were correlated with higher supervisee pass rates.

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Summary

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This study provided evidence of significant differences in BCBA/BCBA-Ds supervision practices used with precertification candidates (PS). A majority of respondents have been certified and practicing as a supervisor for PS for 5 years or less. Supervisors reported perceived frequency of individual behaviors with a range of 2 *rarely* to 4 *usually*. The greatest amount of difference was seen in the PECC 5.0 code 5.01 *Supervisory Competence* and 5.07 *Evaluating Effects of Supervision*. Supervisors demographic variables indicated 29 significant relationships between supervisor demographics and supervisor behaviors. Of the 29 significant relationships, the demographic variables with the highest number of significant relationships were number of candidates supervised (*n*=4, 13.7%) and scheduled weekly hours to supervise (*n*=4,

13.7%). Supervisors reported pass rate did reveal seven significant correlations between specific supervision behaviors and higher pass rates. Of the seven significant correlations, 'reviewing literature' had the smallest p-value (.007), which indicates the supervisors who engaged in this 5 *almost always* had a reported higher PS pass rate. There are significant differences in the use of these individual supervision behaviors (n=46) across PS supervisors with a subset ($n=7$, 15.2%) of these individual supervisor behaviors correlating with higher pass rates.

CHAPTER V

DISCUSSION

My purpose in this study was to assess the supervision practices that

BCBA/BCBA-D use with precertification candidates to determine if there were any

significant differences between supervisor demographics and supervision practices. To

assess these demographics and practices, I developed the Supervision Practices of

Precertification Candidates (SPPC) survey to assess the reported occurrence of

recommended supervisor behaviors used by BCBA/BCBA-D supervisors with

precertification candidates (PS). A single one-way between groups ANOVA was used to

determine if there were statistically significant differences between the Professional and

Ethical Compliance Code (PECC) *5.0 Behavior Analyst as a Supervisor* and the

Miscellaneous category. I used multiple ANOVAs to determine if there were any

statistically significant differences between supervisor demographics and PECC *5.0

Behavior Analyst as a Supervisor* and the Miscellaneous categories. I used a Spearman

Correlation to determine if there were any significant differences in reported

precertification candidate outcomes. Statistical analyses revealed an overall significant

difference between the PECC *5.0 Behavior Analyst as a Supervisor* category averages,

PECC *5.0 Behavior Analyst as a Supervisor* categories compared to supervisor

demographic variables, and a significant correlation between seven individual supervisor

behaviors and reported precertification candidate pass rate.

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Demographics

Only 0.90% reported no prior supervision training relative to PS supervision. A majority of respondents (i.e., 32.9%) revealed that initial supervisor training was completed mainly through online internet-based training. Supervision protocols used with the PS candidates were also mostly derived from internet-based continuing education (CE) trainings (i.e., 22%). Relatively fewer respondents reporting having mentorship as an initial resource for supervision training (i.e., 22.5%) with almost 0% reported mentorship as an ongoing resource (i.e., 0.10%).

LeBlanc & Luiselli (2016) described the lack of explicit training and mentorship in supervision practices. Although there was no data to support that observation, findings from my study support LeBlanc and Luiselli's (2016) observation because the population sample reported mentorship at a very low rate compared to other resources (i.e., 22.5%). In addition, DiGennaro- Reed & Hunley (2015) reported that 66.30% BCBAs had no available training on effective supervision practices for supervision of direct care staff. While the study populations are different (i.e., direct care staff versus precertification candidates), it is encouraging to see the improvement in the supervision preparation percentages among BCBA/BCBA-Ds (i.e., 2015, 66.30%; 2018, 0.90%). It is likely that the BACB's January 1, 2015 modifications for BCBA/BCBA-D eligibility to supervise had a drastic impact on the availability of pre-service supervisor training materials because this was a requirement in order to supervise precertification candidates (BACB® Newsletter, 2012).

In my study, most PS supervisors reported supervising '1-3' PS candidates at one time. Respondents reported using an 'allotted' (i.e., these are the hours employer sets

aside for supervision related activities) '1-5' hours a week for PS Supervision. Respondents reported using 'scheduled' (i.e. these are the hours the actual supervisor uses) '1-5' hours a week for PS supervision. It is encouraging to see the reported 'allotted' by employer and 'scheduled' by PS supervisors are relatively consistent (i.e., 1-5 hours). It was alarming that 23% of PS supervisors reported no "allotted time' for PS supervision because these supervisors could be beyond their work capacity. Further, most survey respondents selected 12 or more clients (i.e., 47.9%) in addition to supervising 1-3 precertification candidates (i.e., 77.3%). Therefore, it is uncertain if BCBA/BCBA-Ds are maintaining a reasonable work volume to comply with *5.02 Supervisory Volume* because there is no published guidance on how many precertification candidates one supervisor should support at one time while also working with clients/consumers. One available point of reference is the BACB's published Practice Guidelines for autism spectrum disorders (ASD). The BACB recommended, in serving ASD, BCBAs/BCBA-D maintain a 1:10-15 ratio for consumers/clients receiving focused treatment (i.e., 10-25 weekly hours per week of direct treatment to the client). It is recommended that BCBA/BCBA-Ds maintain a 1:6-12 ratio for comprehensive treatment (i.e. 30-40 weekly hours direct treatment to the client). The ASD practice guidelines also suggest the standard of care for client/consumer case management supervision is 2 hours for every 10 hours of treatment (i.e., 20%) (BACB, 2014). It would be helpful to BCBA/BCBA-D precertification candidate supervisors, if the BACB published guidance on the ratio of precertification candidates that one BCBA/BCBA-D could reasonably support while also serving clients/consumers.

My results revealed that most survey respondents selected serving 12 or more clients at one time, in addition to supervising 1-3 precertification candidates. Based on this information, it is possible that the survey respondents are at the upper limits of the BACB ASD caseload guidelines. As described by Turner et al., (2016), one premise of ethical supervision is the supervisor has time to complete all related tasks (i.e., prior to contact, during contact, post contact). Turner et al., (2016) provided examples of prior, during, and post-supervision activities so supervisors can accurately calculate hours per a precertification candidate (e.g., preparing an agenda, sending emails, creating materials, driving to the observation setting). Similarly, Sellers et al., (2016) stressed the importance of BCBA/BCBA-Ds evaluating work contingencies prior to taking on precertification candidates. By calculating hours required for all supervision activities, the BCBA/BCBA-D supervisor is adhering to *5.02 Supervisory Volume.*

Limitations of my study include analyzing work responsibilities relative to PECC *5.02 Supervisory Volume.* I did not request information on the use of a BCaBA for consumer/client case management support to the BCBA/BCBA-D. In addition, I did not collect information on the type of the client/consumer population served as well as the intensity (e.g., crisis cases or comprehensive ASD treatment). Overall, PS supervisors in my survey may have a full work schedule (e.g., 40 hours a week) comprised of responsibilities to a client/consumer caseload (e.g., serving 12 or more clients/consumers). Precertification supervision appears a secondary work responsibility relative to the primary work responsibility of serving clients/consumers because so many PS supervisors serve 12 or more clients while only supervising 1-3 PS candidates. Since 23% of PS supervisors self-reported no allotted work time by employer for PS activities,

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these PS supervisors may work beyond their regularly scheduled work week to complete tasks associated with PS supervision. A follow-up question would be to request information on how many hours outside of the work week are spent on activities related to PS supervision. It is critical for the integrity of supervision that BCBA/BCBA-D supervisors have enough time to support PS candidates; otherwise, BCBA/BCBA-D supervisors may need to decline accepting precertification candidates. Therefore, more logistical details are needed on how much time it takes PS supervisors to manage precertification candidates outside of their regularly scheduled work hours.

How often are supervisors reporting use of recommended supervisory behaviors with precertification candidates?

The BACB outlines supervision behaviors in PECC *5.0 Behavior Analyst as a Supervisor.* Since these behaviors are outlined as part of professional and ethical compliance, it is a reasonable assumption that all of these supervision behaviors are equally important for professional and ethical precertification candidate supervision. Therefore, since these are part of the PECC *5.0 Behavior Analyst as a Supervisor,* it would be expected that PS supervisors are reporting averages in the range of 4 *usually* perform to 5 *almost always* perform. The reported PECC 5.0 categories along with *Miscellaneous* category overall average range was just below 4 *usually*. The PECC 5.0 categories along with *Miscellaneous* individual categories ranged from 3 *sometimes* to 4 *usually*. The overall average supervision behavior response was just below 4 *usually* perform. The reported individual supervisor behavior averages range from just above 2 *rarely* perform to just below 5 *almost always* perform.

5.05 Communication of Supervision Conditions, 5.04 Designing Effective Supervision and Training, and 5.06 Providing Feedback to Supervisee performed relatively higher than other categories. It appeared that most BCBA/BCBA-Ds are 4 *usually* to 5 *almost always* engaging in behaviors that support compliance with *5.05 Communication of Supervision Conditions, 5.04 Designing Effective Supervision and Training, and 5.06 Providing Feedback to Supervisee*. The BACB (2012) Supervision Curriculum outlines explicit steps for the sections of these three sections of the code that performed relatively higher (BACB, 2012). These three PECC categories have the most detailed information in the 2012 BACB Supervision Curriculum (e.g., how to deliver feedback has a task analysis provided, critical parts of the supervision contract are provided along with an actual template of a supervision contract, behavioral skills training has step by step instructions). This explicit instruction on what constitutes compliance with these three higher performing PECC categories may have helped PS supervisors in performing better relative to other parts of *5.0 Behavior Analyst as a Supervisor (*i.e., 5.01, 5.02, 5.03, 5.07).

5.01 Supervisory Competence fell in the middle of the PECC *5.0* analysis. Most BCBA/BCBA-Ds self-reported 5 *almost always* engaging the individual behaviors that support compliance with *5.01 Supervisory Competence.* The individual behavior that skewed the overall average in *5.01 Supervisory Competence* was 'participating in professional groups' which was reported at 3 *sometimes* frequency. Certain requirements that are in place within areas of practice may limit a professional from practicing outside of scope of competence (e.g., licensure). Therefore, it is possible that individual responses within this PECC category were reported at a higher frequency due to practice

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contingencies that restrict scope or have highly specific procedures in place to practice outside of an original training setting. In contrast, 'participating in professional groups' is vague and does not have any clear criterion to what constitutes 'participating in professional groups'. BCBA/BCBA-D PS supervisors need more guidance from the BACB on this part of *5.01 Supervisory Competence* compliance. The BACB could provide examples of how often a PS supervisor should engage in this behavior (e.g., 2-4 times a year) and examples of how the PS supervisor could participate in a professional group (e.g., attendance of a meeting, leading a professional meeting)

     5.03 Supervisory Delegation fell towards the end of the PECC 5.0 categories. The responses ranged from 3 *sometimes* to 4 *usually*. The median response was 4 *usually*. Though BCBA/BCBA-Ds should be taking baseline assessments 5 *almost always,* it was not reported as frequently as it should be relative to PECC compliance. While most BCBA/BCBA-D's PS supervisors did report 'practicing a skill set' more frequently than 'confirming a skill set', it seems imperative that the median response should be 5 *almost always* for both of these individual behaviors. Sellers, Alai-Rosales, & MacDonald (2016) outlined the importance of taking baseline assessment of a PS skills prior to delegating a skill. If the precertification candidate does not have the skill, then the BCBA PS supervisor will create opportunities for the PS to acquire the skills (BACB, 2018). One cause for the lower self-reported frequencies could be similar to the patterns observed in *5.05 Communication of Supervision Conditions, 5.04 Designing Effective Supervision and Training, and 5.06 Providing Feedback to Supervisee*. Individual behaviors that required more response effort were self-reported at lower frequencies. Taking baseline and practicing skills both require initial and ongoing effort and time by

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the PS supervisor. It would be helpful to request more information from the PS supervisors on how they assess baseline skills relative to the BACB task list (e.g., does the supervisee self-assess on the task list, does the BCBA watch the PS demonstrate task list item). This follow up would allow further analysis of the level of response effort required by the PS supervisor. In addition, the additional analysis would also allow identification of barriers that prevent the PS supervisor from 5 *almost always* engaging in the behaviors of assessing skills and creating opportunities to practice skills.

   5.02 Supervisory Volume, the overall mean was just above 3 *sometimes* for the individual behavior of 'set schedule for supervision'. Based on the survey responses, primary work responsibilities were to clients/consumers (i.e., 92.1%). Additionally, some PS supervisors (i.e., 23%) are not allotted time in the work week for PS supervision. The needs of clients/consumers can be highly variable causing the PS supervisors schedule to require flexibility. Thus, client variability and lack of employer 'allotted' PS time could make it difficult to have 'set hours' for PS supervision. Since employers dictated a majority of the respondents' caseload sizes (i.e., 54.0%), perhaps it is beyond the control of the BCBA/BCBA-D supervisor to control for these additional work responsibilities (e.g., number of clients assigned, number of PS assigned). LeBlanc & Luiselli (2016) stress the need to gather more information on the work responsibilities of behavior analysts in order to further evaluate work responsibilities that may hinder high quality precertification candidate supervision. Based on my survey results, PS supervisors were, in fact, reporting work variables that may hinder engaging in essential or recommended supervisor practices with precertification candidates (e.g., may have too many clients/ consumers and too few hours to handle activities associated with PS supervision).

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Therefore, it is necessary to do follow up on these work exigencies to determine solutions for these barriers that hinder the BCBA/BCBA-D from consistently engaging in supervision practices.

5.07 Evaluating the Effects of Supervision fell towards the lower range of the PECC 5.0 categories. The survey responses reflect that BCBA/BCBA-Ds are 2 *rarely* to 3 *sometimes* engaging in behaviors that support compliance with this part of the code. Evaluating the impacts of supervision including routine assessment of supervision fidelity is a critical aspect of meeting the criterion for this part of the code. Failing to systematically evaluate the impact of supervision may lead to the delivery of ineffective supervision (Sellers, Alai-Rosales, & MacDonald, 2016; Sellers, LeBlanc, & Valentino, 2016). As with PECC *5.3 Supervisory Delegation,* in order to develop solutions for PS supervisors, it is necessary to ask specific follow up questions on how PS supervisors are currently engaging in these evaluative aspects of supervision (e.g., check list, evaluating client data) while also requesting information on barriers that impede PS supervisors from 4 *usually* to 5 *almost always* engaging in the collective *5.07 Evaluating the Effects of Supervision.*

Relative to the PECC *5.0 Behavior Analyst as a Supervisor,* some sections of the PECC code were consistently reported at a higher frequency than other sections of the PECC code. Behavior analysts report high occurrences of complying with *5.05 Communication of Supervision Conditions, 5.06 Providing Feedback,* and *5.04 Designing Effective Trainings.* Sections of the PECC code that could be improved upon are *5.01 Supervisory Competence* and, specifically, the individual behavior of 'participating in professional groups. *5.02 Supervisory Volume, 5.03 Supervisory Delegation, and 5.07*

Evaluating the Effects of Supervision all had areas for improvements too. The behaviors that could be improved in these three PECC categories are: having a set schedule for PS supervision, confirming a skill set prior to delegating a skill to a PS, practicing a skill set prior to delegating it to a PS to use with clients/consumers, evaluating supervisor fidelity, evaluating supervisee performance, and evaluating client performance.

In the *Miscellaneous* category, there was a lot of variability in the item level averages from 2 *rarely* to 4 *usually*. The overall category average was just below 4 *usually*. It is possible that some of the individual behaviors in the *Miscellaneous* category were not reported as often because there is no robust literature available on supervision practices (Leblanc & Luiselli, 2016). Therefore, PS supervisors were not aware these individual behaviors were recommended. In general, it appeared as though *Miscellaneous* 'group' related behaviors were self-reported occurring at a lower frequency (e.g., group supervision, creating group activities, participating in supervisory study groups). *Miscellaneous* supervisor behaviors that had high averages (e.g., 'return communication within 48 hours', 'arrive on time', 'schedule direct observations') appeared that they may require less effort than supervisor behaviors with low averages (e.g., 'group supervision', 'creating group activities', 'participating in supervisory study groups'). Valentino et al., (2016) stressed the importance of group supervision and the many benefits (e.g., observational learning, developing empathy, public speaking). My study results revealed that group related behaviors were not occurring as frequently as other supervision behaviors. A likely explanation of this pattern is the amount of effort by the PS supervisor correlated to how often the recommended behavior was self-reported

(e.g., arriving on time self-reported higher frequency versus creating a group activity self-reported lower frequency).

My study was limited to self-reported frequency of recommended behaviors that align with the PECC and support high quality PS supervision. Limitations relative to the survey instrument were lack of information on barriers for the respondents who self-reported scores < 3 *sometimes* or less. Capturing information on prior knowledge (e.g., 'sending agendas', 'peer evaluation') of the individual recommended behavior would help pinpoint appropriate solutions. In addition, it is possible that since a majority of respondents have an employer dictated schedule that prevented or limited the PS supervisors from engaging in the *PECC 5.0 Behavior Analyst as a Supervisor* behaviors with the PS candidate. For example, it would be difficult for a PS supervisor to have a 'peer evaluate' her if the employer would not allow another BCBA PS supervisor into the employment setting. Finally, evaluating the reported poorer performance in group activities would require follow up on the perceived value of these activities for the PS supervision process as well as addressing challenges that prevent the PS supervisor from engaging in the behavior (e.g., work responsibilities, supervising only one PS candidate at a time). One way to do this would be to conduct a follow up study to request information on the perceived value of the group activities as well as request information on barriers that prevent group activities.

Are there significant differences between the means of participant responses for PECC 5.0 and Miscellaneous categories?

Research question 2 asks if the differences between all of the PECC *5.0 Behavior Analyst as a Supervisor* and *Miscellaneous* categories are statistically significant. Scores

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at the high end of the range close to 5 *almost always,* were cluster one: *5.05 Communication of Supervision Conditions, 5.04 Designing Effective Training and Supervision,* and *5.06 Delivering Feedback to Supervisee.* The scores of these categories were relatively similarly to each other and statistically different to the rest of the five categories. An interesting pattern was some of the behaviors in these higher categories included less effortful responses such as 'having a supervision termination clause' in the written contract (i.e., *5.05*) than lower categories (e.g., *5.07).* A second pattern was behaviors in these higher categories that are effortful could be considered a fundamental aspect of supervision (e.g., *5.04* 'using behavioral skills training', *5.06* 'providing corrective feedback'). Another pattern within these three higher categories was that one-time behaviors such as executing a 'written supervision contract' (e.g., *5.05)* performed better M=4.92 than behaviors that required ongoing effort 'written documentation of corrective feedback to the PS' M=3.87 (e.g., *5.06).*   There are several potential explanations for these patterns: the lower amount of effort required by supervisor the more likely she will engage in the behavior (e.g. the termination clause only has to be written one time), the more effortful responses have consistently been highlighted as a necessary element by the BACB (e.g., using behavioral skills training and giving corrective feedback) (BACB, 2012), and the nature of the skills on the task list (e.g., using prompting, differential reinforcement) require the use of the procedures in *5.04* and *5.06* more frequently; therefore, behaviors such as using behavioral skills training and delivering feedback occur more frequently.

In the middle of the range 3 *sometimes* to 4 *usually*, cluster two was *5.03 Supervisory Delegation* and *Miscellaneous* category. The scores of these two categories

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were relatively similarly to each other and statistically different than cluster one and cluster three. The behaviors that comprised these groups had similar patterns of higher perceived level of response effort or potential barriers to consistent implementation. The *Miscellaneous* pool of questions was large, so there were a variety of response effort (e.g., 'returning a call' versus 'taking supervision meeting notes'). I speculate that the mixture of high response and low response individual behaviors balanced out the overall *Miscellaneous* group average score between 3 *sometimes* and 4 *usually*. In fact, most of the *Miscellaneous* behaviors that scored lower could be perceived as higher response effort for the supervisor (e.g., 'sending a meeting agenda', 'scheduling group activities', 'conducting group supervision'). There are several potential explanations for these patterns: behaviors that involved group behaviors require ongoing effort and time from the PS supervisor and were more reported with a lower frequency and behaviors that required ongoing planning time by the PS supervisor would be difficult for PS supervisors who do not have enough schedule or allotted time. Thus, these types of individual behaviors (e.g., creating an agenda, sending notes after the supervision meeting) were not self-reported as frequently. Follow up questions could include pinpointing all of the individual behaviors from the *Miscellaneous* behaviors and requesting follow up information specifically on time constraints due to lack of allotted or scheduled time.

In the lower end of the range 3 sometimes, cluster three was the categories of *5.01 Supervisory Competence 5.07 Evaluating Effects of Supervision,* and *5.02 Supervisory Volume.* These three categories fell in the lower range and were statistically different from the five other categories. In contrast, the behaviors that comprised these three

categories were more effortful or could have had potential barriers to implementation. For example, in *5.01 Supervisory Competence* the behavior of 'engaging professional groups in area of practice' may require a lot of ongoing effort by the supervisor as well as available time. Similarly, *5.07 Evaluating the Effects of Supervision* has the individual behaviors of 'ongoing evaluation' that require frequent response effort from the supervisor. Finally, *5.02 Supervisory Volume* includes the behavior of 'having a set schedule for PS supervision', which could be impeded by employer logistics or consumer priorities. There are several potential explanations for these patterns: the level of ongoing response effort and available time to engage in the evaluative activities required more time than the PS supervisor had available in her work week, having a set PS schedule could be self-reported at a lower frequency since so many of the survey respondents may change their work schedules due to client/consumer needs, and engaging in professional groups is a relatively vague part of *5.01 Supervisory Competence* and requires PS supervisor to have time in her schedule to engage in extracurricular professional activities. Follow up research could specifically request information on barriers (e.g., time constraints, client/consumer needs) for PS supervisors.

Future research should focus on how to move all of the PECC *5.0* subcategories to 5 *almost always* because the BACB has identified these categories and the individual behaviors as part of the BCBA PS supervisors professional and ethical responsibility in providing high quality supervision. Therefore, pinpointing the individual behaviors from the lower score clusters in the PECC categories would be a logical follow up. A limitation of research question two is the individual supervision behaviors were not evenly distributed across the seven PECC categories (e.g., *5.01 Supervisory Competence*

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had four questions and *5.02 Supervisory Volume* had one question). It may be helpful from a statistical analysis perspective, to have the BACB assign *Miscellaneous* recommended behaviors to sub-category of the PECC *5.0 Behavior Analyst as a Supervisor.*

Are there significant differences between the means of participant responses for PECC 5.0 and Miscellaneous categories relative to supervisor demographics?

The intention of this research question was to evaluate the demographic data for any patterns that would inform accredited higher education programs or other stakeholders that prepare and support BCBA/BCBA-Ds to become supervisors for future behavior analysts. There was no information available on demographics relative to performance as a BCBA/BCBA-D supervisor for precertification candidates. Relative to analyzing from the PECC categories, significant relationships that emerged during the data analysis were primarily in *Miscellaneous, 5.02 Supervisory Volume, and 5.01 Supervisory Competence* across demographic variables of 'place of employment', 'allotted hours', and 'scheduled hours'. The Tukey HSD comparisons revealed that 'university' respondents self-reported higher than 'home-based' respondents in those three categories. There is no available literature to reference relative to this particular finding. More information would be needed to determine the contingencies in a 'university' setting that support higher reported frequency of these supervision behaviors in these three categories. For example, follow up research could specifically look at the following contingencies for 'home-based' practitioners: clinical needs (e.g. wide scope of client treatment issues that impact scope of competence), possible employer barriers, and

unpredictable client logistics (e.g., time available for PS supervision fluctuates more frequently).

I was also interested in determining how basic demographics such as 'area of study', 'years in practice', 'years as a supervisor', and 'job classification' may impact PS supervision. Surprisingly, 'years as a supervisor' was the only basic demographic that was statistically significant. 'Years as a supervisor' was statistically different for *5.01 Supervisory Competence* for respondents who have practiced as a supervisor '< two years'. My initial findings from *5.01 Supervisory Competence* relative to the < 2 years as a supervisor would support the upcoming BACB supervision restriction set for January 1, 2022. The changes impose restrictions on newly certified candidates' ability to supervise precertification candidates within the first year of certification (BACB Newsletter, October 2017). The BACB did not publish any data on how they determined the upcoming supervision restriction; however, my findings offer support for the upcoming January 1, 2022 restriction because newly certified professional (i.e., < 2 years) self-reported lower frequency of behaviors in *5.01 Supervisor Competence.*

In addition, regarding 'years as a supervisor' as a significant indicator of supervision practices, my data support the observations made during the literature review regarding the iterations of the BACB task list. A majority of BACB supervisors from the 3rd edition task list did not have any competencies related to supervision or managing personnel (BACB, n.d.) The 4th edition task list began to have the emerging competency listed in section K (BACB, n.d.). With the exception of certificants who have practiced less than 2 years, it is possible that candidates that fell under the 4th edition task list are better equipped to handle certain aspects of PS supervision for this reason.

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Other demographics that came up with multiple statistical relationships across PECC *5.0 Behavior Analyst as a Supervisor* and the *Miscellaneous* categories were 'total number of candidates supervised' and 'scheduled hours'. Looking closer at the item level questions relative to these two demographics, PS supervisors with more candidates and more scheduled PS supervision time in the week also self-reported higher averages for a subset of individual behaviors related to group supervision in the *Miscellaneous* category (e.g., 'create group activities' and 'conducting group supervision'). Based on these findings, most supervisors were not able to support supervision practices that involve group contingencies. Having group supervision lends itself to supporting the PS candidate in developing well-rounded professional repertories (Valentino, LeBlanc, & Sellers, 2016). If having more candidates and adequate time lends itself to meeting the *Miscellaneous* group recommended behaviors, it is beneficial to precertification supervision to do a follow up and evaluate the feasibility to support these additional group behaviors for the PS supervisor. Turner et. al., (2016) stressed the importance of careful evaluation of the work schedule prior to taking on precertification candidate responsibilities. Having additional PS candidates would potentially place a majority of PS supervisors in conflict with *5.02 Supervisory Volume* given the additional work responsibilities (e.g., serving 12 or more clients/consumers) reported along with caseload considerations for ASD practice guidelines (BACB, 2014). Therefore, follow up research could investigate ways to create group supervision and address work-related barriers that PS supervisors may face.

Research question three was focused on how basic demographics may impact PS supervisor behavior. The goal was to use this information to inform BACB accredited higher education programs or other stakeholders. Overall, these initial results reveal that

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employment demographic variables may have the most impact on the BCBA/BCBA-Ds PS supervision practices. Follow up could focus on further evaluating employer practices relative to supporting BCBA/BCBA-Ds in delivering high quality and effective PS supervision.

Are there correlations in certification outcomes relative to supervisors reported individual supervision behaviors?

Similar to the importance of assessing how behavior analytic intervention impacts the outcomes for clients/consumers, it was necessary to consider how BCBA/BCBA-D supervision practices impacted the precertification candidate. The most efficient way to measure impact on precertification candidates was to evaluate the BACB exam pass rate of the BCBA/BCBA-D supervisors' candidates. The 2017 overall summary statistics for first-time BACB exam pass rate was 65% (BACB, n.d.). There were no pass rate percentages available by BCBA/BCBA-D supervisor. Since PS candidates may have more than one BCBA/BCBA-D supervisor, it would be impossible to determine the impact of a single supervisor on the individual BACB exam pass or fail results. Therefore, to reduce threats to internal validity, I only requested BACB pass rate information on the PS candidates for which PS supervisor provided all supervision fieldwork hours (i.e., 75 hours for BCBA and 50 hours for BCaBA).

The strongest two correlations were in PECC *5.01 Supervisory Competence.* 'checking credentialing requirements' for new areas of practice and 'seeking additional training and supervision' for new areas of practice were positively correlated to higher reported BACB exam pass rate. In research question two and research question three, reoccurring data patterns revealed that respondents certified for < 2 years, self-reported

statistically significantly lower on behaviors in *5.01 Supervisory Competence.* This information along with these two correlations 'checking credentialing requirements' for new areas of practice and 'seeking additional training and supervision' provide additional support for the January 1, 2022 BACB upcoming supervision restriction for newly certified behavior analysts (BACB Newsletter, 2017). It is possible that allowing newly certified individuals to supervise precertification candidates could have an adverse impact on the precertification candidate's BACB exam pass rate.

The *Miscellaneous* category had three positive correlations: 'review literature', 'include ethics', and 'attend conferences' had positive correlations. The BACB has recently placed additional continuing education (CE) requirements for maintaining certification. During the two year- recertification cycle, 3.0 CEs covering supervision and 4.0 CEs covering ethics must be completed (BACB Newsletter, 2013). There was no data published by the BACB to support these CE changes. My survey results could indicate that the supervision and ethics CE requirement has had a positive impact on the PS outcome because a lot of BCBA/BCBA-D PS supervisors may have attended professional conferences to gain continuing education credits in ethics and supervision.

5.03 Supervisory Delegation had one item with a positive correlation 'practicing a skill set'. In relation to the positive impact on the BACB pass rate, perhaps BCBA/BCBA-Ds PS supervisors that create frequent opportunities for a PS to practice BACB task list items resulted in increased comprehension of the BACB task list items. Sellers et. al., (2016) detail the necessity of ensuring supervisees have met criterion for skills prior to delegating the use of task list skills with clients. Therefore, due to the

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potential for adverse impact on a client, this individual supervision skill could be priority for the BCBA/BCBA-D supervisor to avoid harm to the consumer.

Finally, *5.07 Evaluating Effects of Supervision* 'evaluating client performance' had a weak negative correlation for higher pass rate. This means that the higher self-reported frequency of 'evaluating client outcomes' by the BCBA/BCBA-D resulted in lower BACB exam pass rate. Given the respondent demographics, a majority of the BCBA/BCBA-Ds may be primarily providing services to clients/consumers. Therefore, this could be interpreted as the PS supervisor may in fact be spending more time handling client/consumer issues as part of 'evaluating client performance' and less time on other fundamental aspects of PS supervision (e.g., evaluating supervisee, delivering performance feedback, behavioral skills training on BACB task list items).

The initial results were an attempt to identify individual supervisor behaviors that lead to a PS candidate who passes the BACB exam. This analysis revealed seven interesting correlations. However, due to the relatively weak correlations, further research would be needed before making any more definitive conclusions.

Implications for Applied Settings

The present study had findings that have important implications for BCBA/BCBA-Ds working with precertification candidates. First, employment variables may play an important role in the overall ability of a BCBA/BCBA-D precertification candidate supervisor to consistently perform high quality supervision for precertification candidates. BCBA/BCBA-D supervisors require allotted time from the employer and scheduled time in the week to conduct activities associated with precertification candidate supervision (e.g., before, during, after supervision contact). Most respondents

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reported a range of 1-5 hours a week in order to supervise precertification candidates. Most respondents also reported that they supervised 1-3 precertification candidates at one time. Employers should ensure that the BCBA/BCBA-D receive allotted time of at least 1-5 hours within the work week to conduct activities associated with the supervision of 1-3 precertification candidates. The number of employer allotted hours should increase as the number of precertification candidates increases. Additional follow up research is needed to determine optimal allotted time for supervision of precertification candidates.

Further, access to more than one precertification candidate is necessary in order to have an opportunity to develop group related fieldwork experiences. Group related supervision has several positive benefits including development of effective professional repertories and interpersonal skills used with clinical populations (Valentino et. al., 2016). Therefore, it is paramount for an organization to consider not only the amount of time allotted but the number of candidates a supervisor has access to. For example, an organization could assign one BCBA/BCBA-D supervisor the responsibility of organizing one group supervision meeting per a calendar month while also providing that particular supervisor additional allotted time to prepare for the group supervision meeting. If access to precertification candidates within the same organization is a barrier, organizations within the same geographical area could engage in a collaborative professional relationship to support group supervision among other organizations. Local Association of Behavior Analysis International (ABAI) state chapters could also be engaged in help facilitate the development of these collaborative relationships.

In addition, we recommend employers familiarize themselves with the best practice recommendations for precertification supervision along with the Professional

and Ethical Compliance Code (PECC) section *5.0 The Behavior Analyst as a Supervisor* (BACB, 2014). Internal organizational policy development and structure of precertification candidate (i.e., fieldwork) supervision should be derived from governing BACB policies and best practices for the supervision of precertification candidates. Organizations should carefully consider assigning any BCBA/BCBA-Ds the responsibility of a precertification candidate supervision if the BCBA/BCBA-Ds main job responsibility is serving consumers (e.g., 12 or more consumers caseload at one time). Due to the time required to serve consumers, supervising precertification candidates may place the BCBA/BCBA-D in conflict with the requirements of *5.02 Supervisory Volume*. Finally, along the same lines, employers should avoid assigning precertification candidate supervision to a newly certified BCBA/BCBA-D with less than 2 years post certification.

Our findings also suggest that the Behavior Analyst Certification Board (BACB) could provide additional clarity and guidance on sub sections of PECC *5.0 Behavior Analyst as a Supervisor*. Section 5.04, 5.05, and 5.06 all performed relatively higher than 5.01, 5.02, 5.03, and 5.07. The sections of the code that were reported at higher frequency all have clearly outlined procedures of what constitutes supervisor behavior that aligns with the individual sub section. For example, *5.04 Designing Effective Supervision and Training* describes a step by step procedure of how a supervisor should teach the precertification candidate behavior analytic skills (BACB, 2012). Therefore, it would be helpful if the supervision curriculum provided the same level of detail for 5.01, 5.02, 5.03, and 5.07, including how often the supervisor should engage in the behavior along with examples and non-examples. Further, specific to *5.02 Supervisory Volume*, the

BACB could also provide clear guidance on a responsible ratio for supervising precertification candidates. Similar to the *Applied Behavior Analysis Treatment of Autism Spectrum Disorders: Practice Guidelines for Healthcare Funders and Manager*, the BACB provided guidelines for responsible caseload ratio as well as estimated amount of indirect and direct time spent supervising a consumer case (BACB, 2014). A similar set of guidelines could be developed, since so many BCBA/BCBA-Ds serve consumers. We need clear guidance on a consumer to precertification candidate ratio for BCBA/BCBA-Ds that have to serve both roles due to employer requirements. In order to determine what an appropriate ratio is, additional research needs to be conducted to determine how long it takes a BCBA/BCBA-D to complete all activities associated with precertification candidate supervision. One suggestion would be to conduct research with a group of BCBA/BCBA-D supervisors who are willing to document time spent completing supervision activities that occur before, during, and after supervision. Turner et al., (2016), described several variables that a supervisor should consider before agreeing to conduct precertification candidates. This research would help objectively quantify how much time is needed to deliver high quality supervision to a precertification candidate. This information can be used to have BCBA/BCBA-Ds self-assess to ensure they have sufficient time to take on a precertification candidate.

Lastly, the quality of precertification supervision is of extreme importance to the integrity of behavior analysis. In this study, a majority of BCBA/BCBA-Ds reported they did not receive graduate coursework or comprehensive competency-based assessment on the critical skills required to deliver precertification supervision. Most individuals in this current study reported relying on online continuing education events or conferences in

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order to get information on supervision for precertification candidates. The primary reason for the lack of specific supervision skills and resources may be due to the relatively new development of this certification (i.e., 1998). However, due to the exponential growth rate and the predictions for ongoing growth, it is necessary for the field to consider additional safeguards for the responsible supervision of future generations (Burning Glass Technologies, 2015). For example, for BCBA/BCBA-Ds who wish to supervise precertification candidates, the BACB may consider requiring competency based graduate level training focused on the supervision of precertification candidates. This additional requirement could be optional and not a mandatory part of the required course work sequence.

Limitations

This study has several limitations worth noting. First, dissemination of an online survey presents challenges with ensuring the invitation to participate is received. We are unsure of how many potential respondents did not receive the mass email due to spam filters. Second, challenges in running statistical analysis included having an adequate sample size and a representative sample. Although, we were able to analyze the geographic distribution, ideally, the total sample size would have been closer to 10% of BCBA/BCBA-Ds (e.g., 3,000). The smaller sample size limits the generalization of the results. Third, the statistical analysis across the eight categories could be improved if the miscellaneous category behaviors were all assigned to a distinct part of the PECC *5.0 Behavior Analyst as a Supervisor*. Finally, this research produced several interesting results that could be used to generate hypotheses about demographic and employment variables that may impact higher reported occurrences of supervisor behaviors.

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Additional hypotheses testing is needed to confirm these results. Future research should address these limitations by assigning miscellaneous behaviors to subsection of the *5.0 Behavior Analyst as a Supervisor* and attempting to increase the BCBA/BCBA-D supervisor response rate.

Summary

In summary, this study shows that there are differences in how frequently BCBA/BCBA-D supervisors self-reported engaging in recommended supervision practices. BCBA/BCBA-D supervisors selected a range from 2 *rarely* to 5 *almost always* relative to individual behaviors. BCBA/BCBA-D supervisors overall average was just below 4 *usually* as a composite score across all forty-six behaviors. Behaviors comprising PECC *5.05, 5.04,* and *5.06* were all self-reported at higher frequencies relative to other parts of *5.0 Behavior Analyst as a Supervisor.* Further, the results reveal that there is a statistical difference between PECC *5.0 Behavior Analyst as a Supervisor* and *Miscellaneous* categories as well as the PECC *5.0 Behavior Analyst as a Supervisor* and *Miscellaneous* categories relative to demographic variables. Demographic variables with the most interesting statistical differences were 'total number of PS candidates', 'allotted time', and 'scheduled time'. PS BACB exam pass rate had initial findings that suggest seven weak correlations between individual BCBA/BCBA-D supervisor behaviors and PS BACB pass rate.

Prior to this study, there had not been a comprehensive assessment of BCBA/BCBA-D supervisor practices used with precertification candidates. The survey instrument that was developed, Supervision Practices of Precertification Candidates (SPPC) cataloged a variety of individual supervisor behaviors that leaders in the field

suggest are important to high quality supervision. The use of the SPPC could extend into BCBA/BCBA-D supervisors regularly assessing frequency of supervision practices. Further, this assessment could be used to improve PS service delivery by providing stakeholders and BCBA/BCBA-D supervisors with an understanding of what individual behaviors comprise ethical and effective supervision practices that align with the BACB PECC *5.0 Behavior Analyst as a Supervisor.*

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APPENDIX A: SUPERVISION PRACTICES OF BCBA/BCBA-DS WEB-BASE
INVITATION

Invitation to Participate in Supervision Practices of BCBAs/BCBA-Ds

Zahra Hajiaghamohseni, a doctoral student at the University of South Carolina, invites
you to participate in a research study investigating the supervision behaviors of behavior
analysts with precertification candidates.

The supervision and preparation of precertification candidates is a vital aspect of ensuring
competent generations of future behavior analysts. Publications discussing
precertification supervision are limited. Therefore, little is known about the supervision
candidates of behavior analysts with precertification candidates and further how these
supervision behaviors impact the outcomes of precertification candidates.

You are being asked to participate because you are identified in the BACB online
database as a BCBA who meets the BACB supervisor eligibility requirements to
supervise fieldwork candidates. The information you provide will contribute valuable
information to help improve the supervision of precertification candidates. This online
survey is voluntary and will take approximately 15 minutes to complete. Your responses
will remain anonymous and will be automatically sent through the internet to Qualtrics.
You are not required to respond to questions and at any time prior to submission, you can
cease survey completion or opt out of answering any questions. You will not receive any
additional compensation for completion of this survey. If you have any questions about
this survey, please contact Zahra Hajiaghamohseni at zhajiaghamohseni@gmail.com.

www.manaraa.com

APPENDIX B: SUPERVISION PRACTICES OF BCBA/BCBA-DS SURVEY

Supervision Behaviors

Q1. The purpose of this study is to investigate supervision practices that BCBA/BCBA-D supervisors use with precertification candidates. Participation in this survey study is completely voluntary. Your responses on the survey will remain anonymous; therefore, your decision whether or not to participate will not impact your current or future relations with the research team, the University of South Carolina or your current organization. If you decide to participate, you are free to withdraw your consent and discontinue participation in the survey at any time without any consequences.

Q2. Do you meet the BACB current requirements to be an eligible fieldwork supervisor for precertification candidates?

Q3. How many years have you been a board-certified behavior analyst (i.e. BCBA or BCBA-D) *Please enter 1 if you have practiced less than 1 year?

Q4. How many years have your been a board-certified behavior analyst fieldwork supervisor (i.e. BCBA or BCBA-D)* Please enter 1 if you have practiced less than 1 year?

Q5. What is your master's degree area of study or your doctoral degree area of study?

Q6. What is your primary job classification?

Q7. What is your primary place of employment?

Q8. I live in this state: (this is voluntary and helps research team calculate a more accurate response rate)

[▾]

Q9. I provide precertification supervision through:

☐ University
☐ Agency
☐ Individual private practice
☐ [   ] Other

Q10. I provide precertification supervision in the following format:

[▾]

Q11. Prior to providing precertification supervision, I received the following training on supervision practices (check all that apply):

☐ Nothing
☐ Institution based course work
☐ Internet based continuing education
☐ Conferences or workshops
☐ Individual mentoring
☐ [   ] Other

Q12. How many precertification candidates have you provided 100% of fieldwork hours, (i.e., provided all 50 hours for BCaBA and provided all 75 hours for BCBA, please enter 0 if you have not done 100% fieldwork for any candidate):

https://uofsc.az1.qualtrics.com/Q/EditSection/Ajax/GetSurveyPrintPreview

Qualtrics Survey Software

[   ]

Q13. Of the precertification candidates you provided 100% of fieldwork hours, how many precertification candidates passed the BACB exam?

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Q14. Of the precertification candidates you provided 100% of fieldwork hours, how many precertification candidates discontinued fieldwork?

[   ]

Q15. The following resources are available to support my role as a precertification candidate supervisor (check all that apply):

☐ Protected office planning time
☐ Administrative assistance
☐ Training on supervision practices
☐ Performance feedback from another BCBA Supervisor
☐ Monetary compensation
☐ Supervision Curriculum
☐ [   ] Other

Q16. Please answer likert scale questions relative to percentage of opportunities

Q17. I assess and evaluate the precertification candidate for a skill set prior to delegating a task:

[▼]

Q18. At any one time, I provide supervision to the following number of precertification candidates:

[▼]

Q19. I contact literature related to a new competency area (e.g. read, search, analyze)

[▼]

Q20. I engage in professional groups in my area of practice (e.g., volunteer on boards, assume leadership positions, serve as a member).

[▼]

Q21. I practice outside of my original training area (e.g., originally completed fieldwork training with autism spectrum disorders and expanded to practice with geriatrics post-certification)

[▼]

Q22. I identify any particular credentialing requirements for practicing in areas outside of my original training (e.g., working with a new population, speech therapy, occupational therapy, organizational behavior management) :

[dropdown]

Q23. I directly pursue training and supervision on areas outside of my original training area (e.g., completing any educational requirements in a new area of application including supervision or practicums, if required or recommended) :

[dropdown]

Q24. My employer/agency/workplace/self-owned private practice allots the following amount of hours for the supervision of precertification candidates during my work week:

[dropdown]

Q25. As part of my job responsibilities, I provide consultation to the following number of clients or consumers (do not include

precertification candidates):

[dropdown]

Q26. I am able to create 60% of fieldwork hours in unrestricted activities for the precertification candidates during each supervision period (e.g., training stakeholders, data analysis, progress monitoring, assessment):

[dropdown]

Q27. My client/consumer consultation caseload size is dictated by the following (do not include precertification candidates):

[dropdown]

Q28. I supervise Registered Behavior Technicians (RBTs):

[⊟]

Q29. When supervising Registered Behavior Technicians (RBTs), the average monthly percentage of time I spend supervising direct service implementation is:

[⊟]

Q30. I have a peer evaluate my supervision:

[⊟]

Q31. Over the past 12-month period, I provided supervision to the

following number of precertification candidates:

[⊟]

Q32. I have a set schedule showing when I am able to supervise the precertification candidate during my work week:

[⊟]

Q33. I schedule the following number of hours a week to the supervision of precertification candidates: (please include preparation, direct contact with supervisee, and follow up from contact):

[⊟]

Q34. I create opportunities for the precertification candidate to practice a skill set (e.g., role play, in situ):

[⊟]

Q35. I have a written supervision contract with the precertification candidate:

[⊟]

Q36. I provide positive and corrective feedback on the precertification candidates skills in a timely manner (i.e., feedback was given immediately up to 2 work days following the skill occurrence):

Q37. I have a supervision contract that outlines conditions for termination of the supervisory relationship with the precertification candidate:

[⬦]

Q38. I use behavioral skills training with the precertification candidate to teach BACB task list competencies:

[⬦]

Q39. I discourage distractions during the supervision meeting (e.g., texting during the supervision meeting, discussing personal issues not impacting precertification candidates performance):

[⬦]

Q40. I use an evaluation system to determine the effectiveness of my supervision on precertification candidate's performance:

[⬦]

Q41. I discuss performance expectations with the precertification candidate (e.g., include any expectations of the precertification candidates performance related to supervision goals)

[⬦]

Q42. I have a written evaluation system to assess precertification candidate performance in professionalism and behavior analytic skills:

[⬦]

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Q43. I developed precertification (supervisee) fieldwork protocols from (check all that apply):

☐ Graduate course work material

☐ Mentorship

☐ Live CEU events

☐ Online CEU training

☐ Published supervision curriculum

☐ [_____] Other

Q44. I objectively document corrective feedback given to precertification candidate (e.g., written with clearly defined behaviors describing the incorrect performance and examples of replacement behaviors):

[_____ ▼]

Q45. I review written supervision contract with the precertification candidate prior to starting supervision:

[_____ ▼]

Q46. I use an evaluation system to determine the effectiveness of my supervision on client performance:

[_____ ▼]

Q47. I return calls or emails from precertification candidates within 2 business days:

[_____ ▼]

Q48. I use an evaluation system to determine the effectiveness of my supervision fidelity (e.g., a measurement system to assess supervisor implementation of supervision behaviors with precertification candidates)

[_____ ▼]

Q49. I provide instructions (e.g., verbal, written) and demonstration (e.g., role model) for the precertification candidate in any areas of need (e.g., skills or competencies they are not meeting performance criterion) :

[_____ ▼]

Q50. I take baseline of supervisees skills relative to BACB task list items:

```
[                    ▼]
```

Q51. I detect barriers to supervision and address them with the precertification candidate (e.g., barriers such as time management, organization, interpersonal skills)

```
[                    ▼]
```

Q52. I use behavioral skills training to teach case presentation to the precertification candidate:

```
[                    ▲]
```

```
[                    ▼]
```

Q53. I send out a meeting agenda prior to my supervision meeting with the precertification candidate:

```
[                    ▼]
```

Q54. I provide opportunity for precertification candidate to practice desired skills with immediate feedback (e.g., opportunities through role play or in situ):

```
[                    ▼]
```

Q55. I continue the professional relationship post-certification:

```
[                    ▼]
```

Q56. I observe body language of precertification candidate to make adjustments in my own supervision behaviors:

```
[                    ▼]
```

Q57. I am able to schedule 4 contacts per a calendar month for precertification candidates (2 of which are direct observation of precertification candidate working with a client/consumer):

[‡]

Q58. I maintain positive rapport with the precertification candidate:

[‡]

Q59. I self-assess my interpersonal skills when I interact with the precertification candidate:

[‡]

Q60. I conduct group supervision for precertification candidates:

[‡]

Q61. I create group activities for precertification candidates:

[‡]

Q62. I participate in supervisory study groups (e.g., meeting with other supervisors to discuss supervision of precertification candidates including sharing suggestions and recommendations with other supervisors):

[‡]

Q63. I include ethics as part of the supervision experience with the precertification candidate:

[‡]

Q64. I arrive on time for scheduled supervisions with the precertification candidate:

[‡]

Q65. I discuss how to give feedback to others and receive feedback from others with the precertification candidate:

[‡]

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Q66. I schedule direct observations of precertification candidate:

[◆]

Q67. I schedule standing supervision appointments with the precertification candidate (e.g., reoccurring appointments) :

[◆]

Q68. I review literature for best practices in any area of

application that I practice: (e.g., supervision, speech)

[◆]

Q69. I take supervision meeting notes and send notes to the precertification candidate:

[◆]

Q70. I attend conferences:

[◆]

Q71. I have had an opportunity to participate in peer review (e.g., journals, conference proposals, colleague assessment reports, research proposals).

○ Yes
○ No

Q72. I participate in peer review (e.g., journals, conference proposals, colleague assessment reports, research proposals)

[◆]

Q73. I seek mentorship:

[◆]

APPENDIX C: ANOVA AND TUKEY HSD RESULTS FOR PECC 5.01 SUPERVISORY COMPETENCE

Demographic	Sub-type	n	M	SD	F	p	Tukey's HSD results					
							1	2	3	4	5	6
Years certified	>5 years	146	4.04	0.58	2.18	.114						
	3-5 years	122	3.97	0.53								
	0-2 years	49	3.85	0.55								
Years supervisor	>5 years (1)	85	4.14	0.52	7.47	.000						
	3-5 years (2)	144	3.99	0.58			.103					
	0-2 years (3)	88	3.82	0.53			.001	.061				
Area of study	Behavior analysis	122	4.06	0.57	2.10	.081						
	Psychology	59	4.05	0.58								
	Counseling	18	3.94	0.40								
	Education	94	3.90	0.54								
	Other	24	3.80	0.55								
Job classification	Researcher (1)	5	4.60	0.44	2.57	.019						
	Professor (2)	14	4.32	0.33			.900					
	Counselor (3)	2	4.25	0.75			.900	.900				
	Other (4)	22	4.15	0.60			.629	.900	.900			
	Psychologist (5)	9	4.03	0.40			.509	.869	.900	.900		
	Teacher (6)	2	4.00	0.25			.834	.900	.900	.900		
	Behavior analyst	263	3.94	0.56			.118	.161	.900	.609		
Place of employment	University or College (1)	29	4.33	0.52	6.26	.000						
	Other (2)	110	4.05	0.55			.075					
	Clinic (3)	86	3.93	0.55			.005	.446				
	Home-based (4)	92	3.85	0.54			.001	.060	.761			
Region	Outside US (1)	17	4.20	0.56	2.79	.027						
	Midwest (2)	47	4.03	0.52			.773					
	South (3)	130	4.01	0.57			.648	.900				
	West (4)	61	4.00	0.55			.636	.900	.900			
	Northeast	60	3.78	0.53			.048	.158	.065	.215		
Supervision format	Practicum	22	4.02	0.59								
	Group & Ind.	123	4.01	0.55	.350	.790						

	Individual	170	3.96	0.57						
	Group	2	3.75	0.25						
Number of candidates	12+ (1)	3	4.58	0.43	1.81	.145				
	4-7 (2)	61	4.07	0.55						
	7-11 (3)	8	4.03	0.63						
	1-3	245	3.96	0.56						
Past 12 months candidates	12+ (1)	15	4.35	0.49	3.55	.015				
	4-7 (2)	73	4.07	0.53			.302			
	1-3 (3)	215	3.94	0.57			.032	.289		
	7-11	14	3.84	0.51			.067	.469	.900	
Allotted hours	16+ hr/wk (1)	18	4.34	0.46	4.16	.003				
	11-15 hr/wk (2)	13	4.13	0.52			.804			
	6-10 hr/wk (3)	55	4.13	0.54			.607	.900		
	0 hours (4)	73	3.93	0.56			.036	.710	.231	
	1-5 hr/wk	158	3.91	0.56			.013	.596	.065	.900
Scheduled hours	16+ hr/wk (1)	14	4.48	0.42	5.76	0.00				
	11-15 hr/wk (2)	26	4.25	0.50			.677			
	6-10 hr/wk (3)	77	4.03	0.53			.039	.403		
	0 hr/wk (4)	3	3.91	0.24			.481	.837	.900	
	1-5 hr/wk	197	3.90	0.56			.001	.020	.380	900
Number of clients	I do not provide consultation to clients/cons. (1)	25	4.28	0.50	3.16	.014				
	1-3 clients/cons. (2)	24	4.08	0.58			.701			
	4-7 clients/cons. (3)	55	4.07	0.50			.525	.900		
	7-11 clients/cons. (4)	61	3.96	0.63			.116	.894	.804	
	12+ clients/cons.	152	3.90	0.54			.015	.564	.297	.900
Who dictates caseload	Do not provide (1)	23	4.18	0.52	3.07	.048				
	Self (2)	124	4.04	0.55			.483			
	Employer	170	3.92	0.56			.090	.191		
RBT supervision %	I do not supervise RBTs.	129	4.06	0.57	1.09	.362				
	10% of patient's direct services	55	3.93	0.67						
	15% of patient's direct services	37	3.94	0.46						
	20% of patient's direct services	41	3.93	0.52						
	5% of patient's direct services	55	3.90	0.50						

Demographic	Sub-type	n	M	SD	F	p	Tukey's HSD results					
							1	2	3	4	5	6
Years certified	>5 years	146	3.38	1.58	0.16	.848						
	3-5 years	122	3.30	1.46								
	0-2 years	49	3.24	1.44								
Years supervisor	>5 years	85	3.44	1.56	0.58	.558						
	0-2 years	88	3.39	1.43								
	3-5 years	144	3.23	1.52								
Area of study	Counseling (1)	18	3.56	1.42	5	0						
	Psychology (2)	59	3.49	1.44			.900					
	Education (3)	94	3.43	1.42			.900	.900				
	Behavior (4)	122	3.39	1.47			.900	.900	.900			
	Other	24	2.04	1.67			.010	.000	.000	.000	.000	
Job classification	Teacher	2	5.00	0	1.15	.335						
	Professor	14	4.00	1.36								
	Researcher	5	3.80	1.47								
	Counselor	2	3.50	1.50								
	Other	22	3.50	1.47								
	Behavior analyst	263	3.27	1.51								
	Psychologist	9	3	1.33								
Place of employment	University (1)	29	3.93	1.44	4.4	.005						
	Other (2)	110	3.58	1.38			.655					
	Clinic (3)	86	3.09	1.55			.047	.105				
	Home-based	92	3.05	1.54			.031	.061	.900			
Region	Outside US	17	3.71	1.27	0.63	.638						
	Midwest	47	3.43	1.50								
	South	130	3.4	1.49								
	West	61	3.25	1.49								
	Northeast	60	3.15	1.59								
Supervision format	Group fieldwork	2	3.50	1.50	0.16	.925						
	Group and Individual fieldwork	123	3.40	1.49								

		N	Mean	SD	F	p				
Number of candidates	Individual fieldwork	170	3.28	1.50						
	Intensive practicum	22	3.27	1.68						
	12+ candidates	3	3.67	1.89	0.73	.534				
	4-7 candidates	61	3.56	1.50						
	1-3 candidates	245	3.28	1.50						
	7-11 candidates	8	3.00	1.50						
Past 12 months candidates	7-11 candidates	14	4.07	0.96	1.81	.145				
	12+ candidates	15	3.80	1.42						
	4-7 candidates	73	3.32	1.55						
	1-3 candidates	215	3.25	1.51						
Allotted hours	16+ hr/wk (1)	18	3.56	1.57	3.34	.011				
	1-5 hr/wk (2)	158	3.53	1.4			.900			
	6-10 hr/wk (3)	55	3.44	1.49			.900	.900		
	11-15 hr/wk (4)	13	3.23	1.67			.900	.900	.900	
	0 hr/wk	73	2.78	1.57			.281	.004	.102	.836
Scheduled hours	11-15 hr/wk (1)	26	4.04	1.19	2.76	.028				
	16+ hr/wk (2)	14	3.79	1.57			.900			
	6-10 hr/wk (3)	77	3.44	1.52			.402	.900		
	1-5 hr/wk (4)	197	3.17	1.51			.046	.566	.647	
	0 hr/wk	3	2.33	0.94			.337	.541	.692	.858
Number of clients	Don't provide (1)	25	4.24	1.21	2.52	.041				
	4-7 (1)	55	3.27	1.57			.060			
	12+ (2)	152	3.26	1.50			.021	.900		
	7-11 (3)	61	3.23	1.44			.039	.900	.900	
	1-3	24	3.21	1.58			.116	.900	.900	.900
Who dictates caseload	Do not provide consultation (1)	23	4.22	1.14	5.53	.004				
	Self (2)	124	3.41	1.53			.047			
	Employer	170	3.15	1.49			.004	.293		
RBT supervision	No superv. (1)	129	3.60	1.51	2.8	.026				
	20% (2)	41	3.44	1.50			.900			
	15% (3)	37	3.27	1.27			.741	.900		
	10% (4)	55	3.15	1.58			.334	.865	.900	
	5%	55	2.84	1.45			.015	.292	.632	.791

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Demographic	Sub-type	n	M	SD	F	p	Tukey's HSD Results					
							1	2	3	4	5	6
Years certified	3-5 years	122	4.04	0.80	0.12	.889						
	0-2 years	49	4.01	0.80								
	>5 years	146	3.99	0.81								
Years supervisor	3-5 years	144	4.06	0.71	1.4	.247						
	>5 years	85	4.06	0.86								
	0-2 years	88	3.89	0.88								
Area of study	Psychology Behavior analysis	59	4.09	0.76	0.32	.863						
		122	4.04	0.85								
	Education	94	3.96	0.80								
	Other	24	3.96	0.85								
	Counseling	18	3.94	0.55								
Job classification	Teacher	2	4.25	0.25	0.33	.919						
	Researcher Behavior analyst	5	4.10	0.58								
		263	4.03	0.80								
	Other	22	4.02	0.91								
	Professor	14	3.89	0.74								
	Counselor	2	3.75	1.25								
	Psychologist	9	3.72	0.58								
Place of employment	Clinic	86	4.03	0.74	0.02	.995						
	Other	110	4.02	0.78								
	Home-based University or college	92	4.0	0.87								
		29	4.0	0.83								
Region	Midwest	47	4.14	0.6	1.59	.176						
	West	61	4.09	0.88								
	South	130	4.04	0.82								
	Northeast	60	3.82	0.81								
	Outside US Individual fieldwork	17	3.82	0.75								
Supervision format		170	4.04	0.78	0.15	.927						
	Intensive practicum	22	4.02	0.83								

		N	Mean	SD	F	p				
	Group and Individual fieldwork	123	3.99	0.83						
	Group fieldwork	2	3.75	1.25						
Number of candidates	12+ (1)	3	4.83	0.24	2.81	.040				
							.469			
	4-7 (2)	61	4.15	0.66						
							.265	.501		
	1-3 (3)	245	3.99	0.82						
							.676	.138	.326	
	7-11 candidates	8	3.50	0.94						
Past 12 months candidates	12+ candidates	15	4.30	0.63	0.97	.407				
	7-11 candidates	14	4.11	0.91						
	4-7 candidates	73	4.06	0.72						
	1-3 candidates	215	3.97	0.83						
Allotted hours	16+ hr/wk (1)	18	4.42	0.71	2.89	.022				
							.900			
	6-10 hr/wk (2)	55	4.24	0.69						
	11-15 hr/wk (3)	13	4.04	0.89				.665	.900		
							.153	.900	.900	
	0 hours hr/wk (4)	73	3.94	0.84						
							.096	.092	.224	.900
	1-5 hours a week	158	3.92	0.80						
Scheduled hours	16+ hr/wk (1)	14	4.39	0.63	2.87	.023				
	11-15 hr/wk (2)	26	4.25	0.87				.900			
	6-10 hr/wk (3)	77	4.14	0.74				.776	.900		
	1-5 hr/wk (4)	197	3.92	0.81				.196	.264	.242	
	0 hr/wk	3	3.50	0.82				.399	.530	.635	.895
Number of clients	4-7	55	4.11	0.72	0.49	.742				
	7-11	61	4.04	0.79						
	12+	152	4.01	0.83						
	1-3	24	3.94	0.75						
	Don't provide	25	3.86	0.88						
Who dictates caseload	Self	124	4.03	0.86	0.05	.956				
	Employer	170	4.01	0.77						
	I do not provide consultation to clients/cons.	23	3.98	0.76						
RBT supervision % of patient's direct services	20%	41	4.17	0.81	0.65	.630				
	15%	37	4.08	0.70						
	10%	55	4.03	0.90						
	Don't supervise	129	3.97	0.81						
	5%	55	3.95	0.74						

Demographic	sub-type	*n*	M	SD	F	p	Tukey's HSD Results					
							1	2	3	4	5	6
Years certified	3-5 years	122	4.36	0.88	0.29	.748						
	0-2 years	49	4.35	0.82								
	>5 years	146	4.28	0.91								
Years supervisor	3-5 years	144	4.35	0.85	0.14	.871						
	>5 years	85	4.32	0.92								
	0-2 years	88	4.28	0.90								
Area of study	Education	94	4.46	0.69	1.17	.326						
	Behavior Counseling	122	4.33	0.85								
	Psychology	18	4.22	0.71								
		59	4.20	1.09								
	Other	24	4.12	1.17								
Job classification	Researcher	5	5.00	0.00	1.92	.077						
	Teacher	2	4.50	0.50								
	Other	22	4.45	0.94								
	Professor	14	4.36	0.97								
	Behavior analyst	263	4.32	0.85								
	Psychologist	9	3.78	1.03								
	Counselor	2	3.00	2.00								
Place of employment	University or college	29	4.41	1.03	1.48	.220						
	Other	110	4.39	0.83								
	Home-based	92	4.37	0.82								
	Clinic	86	4.15	0.95								
Region	Outside US	17	4.47	0.70	1.18	.321						

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	South	130	4.40	0.78					
	Midwest	47	4.38	0.73					
	Northeast	60	4.18	1.01					
	West	61	4.18	1.08					
Supervision format	Group & Ind.	123	4.36	0.86	1.56	.199			
	Intensive practicum	22	4.32	0.76					
	Individual fieldwork	170	4.31	0.89					
	Group fieldwork	2	3.00	2.00					
Number of candidates	12+ candidates (1)	3	5.00	0.00	5.83	.000			
	4-7 candidates (2)	61	4.39	0.89			.623		
	1-3 candidates (3)	245	4.33	0.82			.545	.900	
	7-11 candidates	8	3.12	1.62			.008	.001	.001
Past 12 months candidates	7-11 candidates	14	4.43	0.73	0.09	.965			
	4-7 candidates	73	4.33	0.86					
	1-3 candidates	215	4.32	0.89					
	12+ candidates	15	4.27	1.12					
Allotted hours	11-15	13	4.92	0.27	1.75	.139			
	16+	18	4.39	0.76					
	1-5	158	4.32	0.88					
	0	73	4.29	0.85					
	6-10	55	4.22	1.02					
Scheduled hours	16+	14	4.79	0.41	1.45	.219			
	11-15	26	4.50	0.84					
	0	3	4.33	0.47					
	1-5	197	4.30	0.92					
	6-10	77	4.23	0.87					
Number of clients	1-3	24	4.38	0.75	0.19	.942			

	4-7	55	4.38	0.80						
	12+	152	4.32	0.90						
	I do not provide	25	4.32	0.84						
	7-11	61	4.25	0.99						
Who dictates caseload	Self	124	4.39	0.89	0.63	.535				
	Do not provide consult.	23	4.35	0.87						
	Employer	170	4.27	0.89						
RBT supervision %	20% (1)	41	4.56	0.91	3.07	.017				
	Do not supervise (2)	129	4.39	0.82			.779			
	15% (3)	37	4.38	1.02			.884	.900		
	10% (4)	55	4.29	0.82			.559	.900	.900	
	5%	55	3.98	0.88			.013	.035	.211	.348

APPENDIX G: ˆANOVA AND TUKEY HSD RESULT FOR PECC 5.05 COMMUNIATION OF SUPERVISION CONDITIONS

Demographic	sub-type	n	M	SD	F	p	1	2	3	4	5	6
							Tukey's HSD Results					
Years certified	0-2 years	49	4.79	0.37	0.01	.986						
	3-5 years	122	4.78	0.50		.780						
	>5 years	146	4.77	0.45								
Years supervisor	0-2 years	88	4.81	0.39	0.67	.511						
	>5 years	85	4.80	0.36								
	3-5 years	144	4.74	0.55								
Area of study	Counseling (1)	18	4.86	0.17	1.61	.171						
	Behavior analysis (2)	122	4.82	0.37								
	Education (3)	94	4.79	0.45								
	Psychology (4)	59	4.71	0.53								
	Other	24	4.60	0.75								
Job classification	Teacher (1)	2	5.00	0.00	3.11	.006						
	Researcher (2)	5	4.95	0.10			.900					
	Professor (3)	14	4.89	0.23			.900	.900				
	Other (4)	22	4.81	0.69			.900	.900	.900			
	Behavior analyst (5)	263	4.78	0.42			.900	.900	.900	.900		
	Psychologist (6)	9	4.67	0.51			.900	.900	.900	.900	.900	
	Counselor	2	3.5	1.50			.018	.003	.001	.002	.002	.019
Place of employment	University or college	29	4.87	0.25	1.07	.364						
	Other	110	4.81	0.50								
	Clinic	86	4.74	0.45								
	Home-based	92	4.74	0.47								
Region	Midwest (1)	47	4.86	0.26	2.23	.065						
	South (2)	130	4.82	0.32								

		N	Mean	SD	F	Sig			
	Northeast (3)	60	4.78	0.54					
	Outside US (4)	17	4.66	0.47					
	West	61	4.64	0.68					
Supervision format	Group and Individual fieldwork (1)	123	4.83	0.38	6.01	0.00			
	Intensive practicum (2)	22	4.81	0.29			.900		
	Individual fieldwork (3)	170	4.75	0.48			.512	.900	
	Group fieldwork	2	3.50	1.50			.001	.001	.001
Number of candidates	12+ candidates (1)	3	5.00	0.00	7.47	0.00			
	4-7 candidates (2)	61	4.84	0.31			.900		
	1-3 candidates (3)	245	4.78	0.45			.811	.720	
	7-11 candidates	8	4.06	1.02			.012	.001	.001
Past 12 months candidates	12+ candidates	15	4.80	0.41	0.23	.872			
	4-7 candidates	73	4.79	0.44					
	1-3 candidates	215	4.78	0.47					
	7-11 candidates	14	4.68	0.48					
Allotted hours	16+ hours a week	18	4.90	0.24	0.72	.581			
	11-15 hours a week	13	4.83	0.40					
	6-10 hours a week	55	4.83	0.29					
	0 hours	73	4.76	0.44					
	1-5 hours a week	158	4.75	0.53					
Scheduled hours	16+ hours a week	14	4.95	0.19	0.91	.457			
	6-10 hours a week	77	4.82	0.31					
	11-15 hours a week	26	4.79	0.36					
	1-5 hours a week	197	4.75	0.53					
	0 hours	3	4.67	0.31					
Number of clients	I do not provide consultation to clients/cons.	25	4.90	0.22	1.38	.239			

Variable	Category	N	Mean	SD	F	p				
	4-7 clients/cons.	55	4.81	0.44						
	12+ clients/cons.	152	4.79	0.41						
	7-11 clients/cons.	61	4.70	0.52						
	1-3 clients/cons.	24	4.66	0.70						
Who dictates caseload	I do not provide consultation to clients/cons.	23	4.82	0.28	0.09	.912				
	Employer	170	4.78	0.43						
	Self	124	4.77	0.52						
RBT supervision %	I do not supervise RBTs. (1)	129	4.86	0.32	2.45	.046				
	20% of patient's direct services (2)	41	4.76	0.60			.671			
	5% of patient's direct services (3)	55	4.75	0.51			.576	.900		
	10% of patient's direct services (4)	55	4.71	0.44			.232	.900	.900	
	15% of patient's direct services	37	4.63	0.59			.050	.707	.670	.900

APPENDIX H: ANOVA AND TUKEY HSD RESULTS FOR PECC 5.06 PROVIDING FEEDBACK TO SUPERVISEES

Demographic	Sub-type	n	M	SD	F	p	Tukey's HSD Results 1	2	3	4	5	6
Years certified	0-2 years	49	4.36	0.62	0.8	.451						
	>5 years	146	4.25	0.56								
	3-5 years	122	4.24	0.57								
Years supervisor	3-5 years	144	4.28	0.58	0.34	.709						
	>5 years	85	4.27	0.53								
	0-2 years	88	4.22	0.61								
Area of study	Counseling	18	4.44	0.48	0.88	.479						
	Behavior analysis	122	4.29	0.56								
	Psychology	59	4.26	0.57								
	Education	94	4.23	0.56								
	Other	24	4.12	0.73								
Job classification	Researcher	5	4.50	0.32	1.09	.368						
	Other	22	4.48	0.49								
	Teacher	2	4.33	0								
	Professor	14	4.31	0.61								
	Behavior analyst	263	4.25	0.58								
	Counselor	2	4.00	1.00								
	Psychologist	9	4.00	0.36								
Place of employment	University or college	29	4.35	0.58	0.37	.777						
	Other	110	4.27	0.56								
	Clinic	86	4.26	0.55								
	Home-based	92	4.22	0.61								
Region	South	130	4.32	0.53	0.88	.475						
	West	61	4.28	0.60								

		N	Mean	SD	F	p	(1)	(2)	(3)	(4)
	Midwest	47	4.23	0.57						
	Outside US	17	4.18	0.61						
	Northeast	60	4.16	0.61						
Supervision format	Group and Individual fieldwork	123	4.31	0.58	0.64	.590				
	Individual fieldwork	170	4.23	0.56						
	Intensive practicum	22	4.22	0.56						
	Group fieldwork	2	4.00	1.00						
Number of candidates	12+ candidates (1)	3	4.94	0.08	4.07	.007				
	4-7 candidates (2)	61	4.37	0.55			.312			
	1-3 candidates (3)	245	4.24	0.56			.145	.428		
	7-11 candidates	8	3.79	0.75			.015	.037	.121	
Past 12 months candidates	12+ candidates	15	4.37	0.61	0.34	.800				
	7-11 candidates	14	4.32	0.62						
	4-7 candidates	73	4.29	0.56						
	1-3 candidates	215	4.24	0.57						
Allotted hours	16+ hours a week	18	4.45	0.59	1.45	.218				
	11-15 hours a week	13	4.44	0.42						
	6-10 hours a week	55	4.35	0.57						
	1-5 hours a week	158	4.22	0.54						
	0 hours	73	4.21	0.64						
Scheduled hours	16+ hours a week (1)	14	4.67	0.38	4.45	.002				
	11-15 hours a week (2)	26	4.41	0.55			.626			
	6-10 hours a week (3)	77	4.34	0.56			.282	.900		
	1-5 hours a week (4)	197	4.19	0.57			.021	.338	.258	
	0 hours	3	3.61	0.64			.028	.138	.177	.393
Number of clients	7-11 clients/ cons.	61	4.34	0.55	1.07	.373				
	I do not provide consultation to clients/ cons.	25	4.33	0.54						
	4-7 clients/ cons.	55	4.32	0.54						

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	12+ clients/ cons.	152	4.23	0.58		
	1-3 clients/cons.	24	4.10	0.66		
Who dictates caseload	Self	124	4.30	0.54	0.51	.603
	Employer	170	4.24	0.59		
	I do not provide consultation to clients/consum ers	23	4.23	0.62		
RBT supervision %	20% of patient's direct services	41	4.41	0.52	1.62	.168
	10% of patient's direct services	55	4.34	0.61		
	15% of patient's direct services	37	4.26	0.57		
	I do not supervise RBTs.	129	4.24	0.58		
	5% of patient's direct services	55	4.14	0.52		

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APPENDIX I: ANOVA AND TUKEY HSD RESULTS FOR PECC 5.07 EVALUATING EFFECTS OF SUPERVISION CONDITIONS

Demographic	Sub-type	n	M	SD	F	p	Tukey's HSD Results					
							1	2	3	4	5	6
Years certified	0-2 years	49	3.64	1.08	1.9	.151						
	3-5 years	122	3.56	0.95								
	>5 years	146	3.37	1.03								
Years supervisor	3-5 years	144	3.55	0.97	1.13	.325						
	0-2 years	88	3.52	1.05								
	>5 years	85	3.34	1.03								
Area of study	Psychology	59	3.61	1.11	1.13	.343						
	Counseling	18	3.6	1.10								
	Education	94	3.55	0.92								
	Behavior analysis	122	3.42	1.00								
	Other	24	3.17	1.01								
Job classification	Teacher	2	4.00	0.25	1.24	.287						
	Other	22	3.90	0.95								
	Counselor	2	3.88	1.12								
	Researcher	5	3.85	0.7								
	Professor	14	3.79	0.87								
	Behavior analyst	263	3.42	1.03								
	Psychologist	9	3.42	0.68								
Place of employment	University or college	29	3.72	0.88	1.59	.191						
	Other	110	3.56	0.98								
	Home-based	92	3.49	1.08								
	Clinic	86	3.31	1.00								
Region	West	61	3.65	1	0.6	.660						
	Midwest	47	3.48	0.94								
	South	130	3.44	1.03								

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		N	Mean	SD	F	p				
	Northeast	60	3.43	1.03						
	Outside US	17	3.32	0.98						
Supervision format	Group fieldwork	2	3.88	1.12	1.31	.272				
	Group and Individual fieldwork	123	3.62	0.98						
	Intensive practicum	22	3.45	0.87						
	Individual fieldwork	170	3.39	1.04						
Number of candidates	12+ candidates	3	4.83	0.24	1.98	.118				
	4-7 candidates	61	3.55	1						
	1-3 candidates	245	3.45	1.01						
	7-11 candidates	8	3.41	0.98						
Past 12 months candidates	12+ candidates	15	4.08	0.78	1.88	.133				
	4-7 candidates	73	3.49	0.96						
	7-11 candidates	14	3.45	1.08						
	1-3 candidates	215	3.44	1.03						
Allotted hours	11-15 hours a week	13	4.00	0.9	1.96	.101				
	16+ hours a week	18	3.67	1.23						
	6-10 hours a week	55	3.67	0.92						
	1-5 hours a week	158	3.42	0.97						
	0 hours	73	3.35	1.08						
Scheduled hours	16+ hours a week (1)	14	4.29	0.65	3.85	.005				
	6-10 hours a week (2)	77	3.65	0.93			.183			
	11-15 hours a week (3)	26	3.51	1.08			.132	0.9		
	1-5 hours a week (4)	197	3.37	1.02			.009	.230	.900	
	0 hours	3	2.75	0.74			.112	.536	.696	.798
Number of clients	I do not provide consultation to clients/con.	25	3.85	0.89	1.78	.133				
	4-7 clients/con.	55	3.61	0.85						
	12+ clients/con.	152	3.47	1.01						
	7-11 clients/con.	61	3.37	1.13						
	1-3 clients/con.	24	3.18	1.02						

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Who dictates caseload	I do not provide consultation to clients/consumers	23	3.60	1.00	0.37	.688
	Employer	170	3.51	0.98		
	Self	124	3.43	1.05		
RBT supervision %	15% of patient's direct services	37	3.63	0.97	1.24	.292
	20% of patient's direct services	41	3.62	1.09		
	I do not supervise RBTs.	129	3.51	1.00		
	10% of patient's direct services	55	3.47	1.12		
	5% of patient's direct services	55	3.23	0.86		

APPENDIX J: ANOVA AND TUKEY HSD RESULTS FOR MISCELLANEOUS CATEGORY

Demographic	Sub-type	n	M	SD	F	p	Tukey's HSD Results 1	2	3	4	5	6
Years certified	0-2 years	49	3.90	0.42	0.17	.841						
	>5 years	146	3.90	0.43								
	3-5 years	122	3.87	0.44								
Years supervisor	>5 years	85	3.91	0.41	0.43	.653						
	3-5 years	144	3.89	0.47								
	0-2 years	88	3.86	0.39								
Area of study	Behavior (1)	122	3.96	0.39	3.32	.011						
	Counseling (2)	18	3.94	0.30			.900					
	Education (3)	94	3.90	0.42			.896	.900				
	Psychology (4)	59	3.81	0.51			.183	.749	.635			
	Other	24	3.65	0.46			.011	.180	.068	.525		
Job classification	Researcher (1)	5	4.13	0.48	2.12	.051						
	Professor (2)	14	4.11	0.24			.					
	Other (3)	22	4.03	0.34								
	BX analyst (4)	263	3.87	0.43								
	Teacher (5)	2	3.85	0.03								
	Psychologist (6)	9	3.71	0.42								
	Counselor	2	3.37	1.17								
Place of employment	University (1)	29	4.07	0.41	2.43	.066						
	Other (2)	110	3.90	0.39								
	Clinic (3)	86	3.87	0.45								
	Home-based	92	3.83	0.45								
Region	Midwest (1)	47	4.03	0.34	2.63	.035						

Category	Subgroup	N	Mean	SD	F	p				
	Outside US (2)	17	3.99	0.48			.900			
	South (3)	130	3.88	0.41			.246	.850		
	West (4)	61	3.88	0.49			.352	.864	.900	
	Northeast	60	3.77	0.44			.019	.357	.491	.649
Supervision format	Group & Ind. (1)	123	4.01	0.41	7.12	0				
	Practicum (2)	22	3.86	0.41			.377			
	Individual (3)	170	3.81	0.41			.001	.900		
	Group	2	3.23	1.04			.047	.185	.212	
Number of candidates	12+ (1)	3	4.50	0.16	5.73	0.00				
	4-7 (2)	61	4.03	0.38			.236			
	1-3 (3)	245	3.85	0.41			.044	.022		
	7-11 candidates	8	3.65	0.80			.016	.080	.522	
Past 12 months candidates	12+ (1)	15	4.20	0.49	3.63	.013				
	4-7 (2)	73	3.93	0.37			.118			
	7-11 (3)	14	3.92	0.35			.274	.900		
	1-3	215	3.85	0.44			.011	.448	.900	
Allotted hours	16+ (1)	18	4.16	0.40	5.46	0.00				
	11-15 (2)	13	4.08	0.45			.900			
	6-10 (3)	55	4.01	0.38			.679	.900		
	1-5 (4)	158	3.86	0.41			.034	.329	.130	
	0 hours	73	3.77	0.45			.900	.458	.011	.562
Scheduled hours	16+ (1)	14	4.30	0.38	8.75	0.00				
	11-15 (2)	26	4.11	0.34			.548			
	6-10 (3)	77	3.97	0.38			.044	.577		
	1-5 (4)	197	3.80	0.43			.034	.004	.130	
	0 hours	3	3.56	0.22			.038	.191	.442	.829
Number of clients	I do not provide consultation to clients/con.	25	4.03	0.32	1.66	.160				
	4-7 clients/con.	55	3.96	0.45						
	7-11 clients/con.	61	3.90	0.46						
	12+ clients/con.	152	3.84	0.42						
	1-3 clients/con.	2	3.82	0.44						

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Who dictates caseload	I do not provide consultation to clients/consumers	23	3.98	0.35	0.81	.448
	Self	124	3.90	0.43		
	Employer	170	3.87	0.44		
RBT supervision %	20% of patient's direct services	41	3.96	0.41	0.98	.418
	15% of patient's direct services	37	3.92	0.46		
	I do not supervise RBTs.	129	3.90	0.41		
	10% of patient's direct services	55	3.89	0.49		
	5% of patient's direct services	55	3.79	0.38		