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Ethical Behavior Analysis: Evidence-Based Practice as a Framework for Ethical Decision Making

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Abstract

As the number of applied behavior analysts continues to grow, ethical practice and decision making become increasingly important. Specifically, improving behavior analysts' ethical decision-making repertoires is critical to effective and ethical behavioral service delivery within the field of applied behavior analysis (ABA). This article proposes that the evidence-based practice (EBP) of ABA (Slocum et al., 2014) provides a framework to support fluent ethical decision making. The purpose of this article is to (a) review the importance of ethical decision making related to the practice of ABA, (b) introduce and summarize EBP of ABA, (c) review the three main components of EBP of ABA, and (d) discuss the broader role that EBP of ABA can play in the field of ABA. We tie the EBP of ABA to current Behavior Analyst Certification Board ethical standards and present actions that behavior analysts can engage in to support their ethical decision making throughout.

Keywords Evidence-based practice · Ethics · Decision making

Applied behavior analysis (ABA), as defined by Baer et al. (1968), has a broad goal of working to improve the human condition. ABA encompasses two primary activities: research and practice. ABA research is aimed primarily at the empirical investigation of socially significant topics, whereas its practice is aimed at using the techniques, concepts, and principles derived from the science to enact socially significant behavior change. As a profession of practice, ABA is one of many empirically based helping professions (e.g., clinical psychology, social work, and school psychology). Similar to other helping professions, ABA is largely guided by an underlying set of rules, referred to as professional ethics. At a very basic level, the role of professional ethics is to protect consumers by aiding practitioners in making decisions that would be deemed "appropriate" by the consensus of both consumers and professionals. In other words, professional ethics are intended to serve as rules that guide professional behavior such that it protects the consumer and is judged to be socially valid by others in the profession.

In general, the professional ethics of helping professions are based on a common core of ethical principles. Guiding ethical principles are analogous to the philosophical assumptions of science (e.g., determinism and parsimony), and as such are a priori and foundational. The purpose of these ethical principles is to guide the development of specific ethical guidelines, which in turn guide decisions in practice. These ethical principles also provide context for making decisions (Kelly et al., 2021) and serve as a measuring stick against which to judge ethical behaviors and decisions. Therefore, it is useful for behavior analysts to be familiar with these principles to provide context for the Behavior Analyst Certification Board's (BACB) ethical code. Indeed, the most recent edition of the *Ethics Code for Behavior Analysts* (BACB, 2020; hereafter referred to as the Ethics Code) begins with a summary of core principles that underlie the code. Although a thorough review of ethical principles is not within the scope of the current article, we will briefly outline some of the fundamental principles. This brief review is based on the

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Ethics Code (BACB, 2020) and published works by behavior analysts (e.g., Bailey & Burch, 2016; Brodhead, Cox, & Quigley, 2018a; Kelly et al., 2021), as well as the descriptions of ethical principles set forth by the Belmont Report (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1978; hereafter referenced as the Belmont Report), the American Psychological Association (APA, 2017), the National Association for School Psychologists (NASP, 2010), the American Educational Research Association (AERA, 2011), and the National Association for Social Workers (NASW, 2017).[1] See Kelly et al. (2021) for a summary of ethical principles that are endorsed by various organizations.

Two fundamental ethical principles are *benefit others* and *do no harm* (APA, 2017; BACB, 2020; Bailey & Burch, 2016; National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1978; Brodhead, Cox, & Quigley, 2018a; Kelly et al., 2021). These two principles mean that our ultimate goals as practitioners are to do what benefits those with whom we work, to avoid engaging in activities that may cause harm, and to take appropriate actions to minimize harm when it is unavoidable. In other words, the well-being of the populations we serve must be at the center of every decision. The fundamental principle to respect and promote the *dignity* and *autonomy* of all people (AERA, 2011; APA, 2017; BACB, 2020; Bailey & Burch, 2016; National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1978; Brodhead, Cox, & Quigley, 2018a; Kelly et al., 2021; NASP, 2010; NASW, 2017) means that practitioners respect the rights and privacy of each person with whom they work. Further, this principle means that practitioners actively work to support the independence and welfare of each person, as well as respect differences and diversity among individuals. The ethical principle of *justice* specifies that all persons are inherently entitled to equal access to and benefit from the services and resources provided by practitioners and the field at large (APA, 2017; Bailey & Burch, 2016; National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1978; Brodhead, Cox, & Quigley, 2018a; Kelly et al., 2021; NASP, 2010; NASW, 2017). The principle of justice also implies the creation of environments that are safe, welcoming, and inclusive to all.

The principle of *professional integrity* requires practitioners engage in honest, fair, truthful, and trustworthy behaviors (AERA, 2011; APA, 2017; BACB, 2020; Bailey & Burch, 2016; Kelly et al., 2021; NASP, 2010; NASW, 2017). Practitioners behave to establish and maintain trust

and are faithful to truth in all activities. *Responsibility*, as an ethical principle, means that practitioners not only are aware of their professional standards and responsibilities but also actively work to uphold them (AERA, 2011; APA, 2017; NASP, 2010). Practitioners also accept responsibility for their work and actions, regardless of the outcomes, and work to correct any ineffective or negative outcomes. The ethical principle of *competence* implies that practitioners maintain high levels of competence in their work, recognize the limits of their competence, and continually seek to advance their competence (AERA, 2011; BACB, 2020; Bailey & Burch, 2016; Kelly et al., 2021; NASP, 2010; NASW, 2017). Competence also entails refraining from engaging in any activities that are outside one's area of expertise. A final principle that can be used to help guide ethical decision making in practice is *pragmatism*. Although not included by the BACB or other organizations, we submit pragmatism[2] as an additional ethical principle (Baer et al., 1968). Pragmatism, in this sense, means that practitioners have a duty to do what works best for those with whom they work. That is, practice decisions should be made to ensure that behavior-change procedures are effective and efficient.

Throughout this article, we will place an emphasis on ethical decision making and ethical behavior. For the purpose of this article, *ethical behavior* refers to all behaviors involved in the broader practice of ABA that support the aforementioned guiding principles and that uphold the spirit and letter of the specific standards outlined by the Ethics Code (BACB, 2020). This definition of ethical behavior expands on a previous definition put forth by Brodhead, Quigley, and Cox (2018b) by incorporating guidance from the current Ethics Code (BACB, 2020) and recent publications on guiding ethical conduct (e.g., Kelly et al., 2021). We take a similar approach in defining ethical decision making by drawing from both the Ethics Code and previous work on ethical decision making by Rosenberg and Schwartz (2019). We define *ethical decision making* as a process wherein the behavior analyst systematically evaluates available response options with respect to the guiding ethical principles and Ethics Code. Thus, ethical decision making is not limited to obvious ethical dilemmas but includes all situations in which a behavior analyst can select from among multiple actions. Given this definition, all decisions made in the practice of ABA are subject to ethical decision making.

As the applied practice of behavior analysis grew into a profession in the later years of the 20th century, it became increasingly important to ensure that practitioners of behavior analysis engage in ethical decision making and consistently demonstrate ethical behavior. In an attempt to increase the

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[1] The following cited documents are current versions of the documents that were used as models for the development of the initial *Guidelines for Professional Conduct for Behavior Analysts* (BACB, 2014): APA (2017), NASP (2010), AERA (2011), and NASW (2017).

[2] Here, we are not using the term "pragmatism" in the philosophical sense (i.e., realism vs. pragmatism) but rather as the term was used by Baer et al. (1968) to discuss the behavioral dimension.

likelihood of this, the BACB was formed as a governing body and instituted a set of ethical guidelines for practicing behavior analysts (BACB, 2001), which evolved into the current Ethics Code (BACB, 2020). Informed by the ethical principles described previously, the Ethics Code describes required professional behavior specific to applied behavior analysts.[3] Although having a professional ethics code is necessary, it is not sufficient to ensure fluent ethical decision making in a broad sense. The BACB recognized this, and upon issuance of the Ethics Code, additional requirements were added for behavior-analytic training and continuing education (CE; BACB, n.d.). As a further emphasis on ethical decision making, many states with licensure laws also require CE in ethics.

Although none would argue with the benefits of these actions, one could point to potential problems with the current model of ethical education and implementation of the Ethics Code within the field of ABA. For example, the current guidelines for training in ABA toward certification—the BCBA/BCaBA Task List (BACB, 2017; hereafter referred to as the Task List) and current verified course sequence standards—do not specify instruction on broader ethical principles and ethical decision making.[4] Further, as has been pointed out by others, there are limited resources available for discussing ethics in ABA (e.g., Brodhead, Quigley, & Wilczynski, 2018c; Rosenberg & Schwartz, 2019; Sellers et al., 2016). It is likely that behavior analysts are receiving limited interpretations of the ethical standards, and an even more narrow view of the field of ethics as they relate to ethical practice and decision making. As a result, it may be the case that education related to ethics tends to place an emphasis on assessing and increasing verbal knowledge (i.e., "knowing about") rather than applying (i.e., "knowing how") the Ethics Code. This model may produce behavior analysts with ethical repertoires more similar to ethical "technicians," trained to follow a narrow list of rules, than to ethical "analysts" with generalizable repertoires in ethical decision making.

The goal for our field is clear: for behavior analysts to engage in fluent ethical decision making that results in the best possible outcomes for our clients and society in general (as a note, we will use the terms "consumer" and "client" interchangeably throughout the remainder of this article). The purpose of this article is to explore the ways in which the evidence-based practice (EBP) of ABA (Slocum et al., 2014) might provide an important resource for ethical practice

and a framework to support fluent ethical decision making. First, we provide a brief summary of EBP of ABA. Next, we review the three main components of EBP of ABA and present actions that behavior analysts can engage in to support their ethical decision making. Finally, we provide a brief discussion of the broader role that EBP of ABA can play in the field of ABA.

EBP of ABA

Definition and Brief History

EBP is a commonly used term in the field of ABA, and discussions of EBP have been increasing in recent years. Several articles have explicitly discussed the role of EBP in behavior analysis (e.g., DiGennaro Reed & Reed, 2008; Slocum et al., 2014; Smith, 2013; Spencer et al., 2012). Slocum et al. (2014) defined the EBP of ABA as "a decision-making process that integrates (a) the best available evidence with (b) clinical expertise and (c) client values and context" (p. 44). In other words, EBP of ABA is a decision-making process that brings together the best empirical evidence, the complex decision-making repertoires of a trained behavior analyst, and important social validity and contextual considerations to solve clinical problems. This definition places a strong emphasis on the use of the best available evidence and does not limit that evidence to that which supports a handful of specific validated, manualized procedures. Instead, it recognizes that the scientific basis for behavioral practice includes a rich literature of complex intervention packages, assessment strategies, practice elements or kernels, and principles, and all of these should be included in the evidence base related to behavioral practice.

EBP of ABA also recognizes the central role of the well-trained behavior analyst who has the ability to conceptualize problems in functional behavior-analytic terms, to select and apply appropriate assessment strategies, to select and implement interventions based on assessment results, and to engage in ongoing progress monitoring and data-based decision making. EBP of ABA also includes client values and context as a primary contributor to behavioral practice. It explicitly recognizes client values as the basis for social validity and other contextual factors as critical to both the appropriateness and effectiveness of practice. Thus, EBP of ABA is not a restricted set of procedures but rather a nuanced approach to behavioral problem solving that is relevant to all clinical practice. Further, this conceptualization is closely aligned with the definition of EBP used by many other professional fields, including medicine (Sackett et al., 1996), psychology (APA Presidential Task Force on Evidence-Based Practice, 2006), occupational therapy (Dysart & Tomlin, 2002), speech-language pathology (American Speech-Language-Hearing Association [ASHA], 2004), and social work (Gilgun, 2005).

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[3] Per the Ethics Code (BACB, 2020), the code items apply to and are enforceable for individuals who are currently certified as Board Certified Behavior Analysts (BCBAs) and Board Certified Assistant Behavior Analysts (BCaBAs), as well as individuals who have submitted their application materials to become BCBA/BCaBA certified. The Ethics Code does not apply to the Registered Behavior Technician credential.

[4] The current Ethics Code that takes effect on January 1, 2022, includes a section dedicated to ethical decision making (BACB, 2020). We anticipate that this will contribute to changes in the way that ethics is taught in the context of behavior analysis training programs.

This conceptualization of the EBP of ABA stands in contrast to the common informal usage of the term EBP to refer to intervention procedures that are supported by some defined (or often undefined) amount and quality of empirical evidence (e.g., National Professional Development Center on Autism Spectrum Disorder, n.d.). The restricted definition of EBP as a specific treatment is not well aligned with the tenets of ABA, leaves the practitioner with few treatment options, fails to recognize the crucial role of the behavior analyst and the client in determining treatment targets and interventions, and is out of step with other fields of professional practice. Still, it is important to identify treatment packages that have strong empirical support. We will use the term empirically supported treatments (ESTs) to refer to individual treatments that have been shown to be effective through a systematic synthesis of the evidence base (e.g., through systematic literature review and meta-analysis).

EBP of ABA and Ethical Decision Making

EBP of ABA is a framework that can support fluent and flexible ethical decision making in several ways. First, the EBP of ABA framework is closely aligned with the defining characteristics of ABA (Slocum et al., 2014) put forth by Baer et al. (1968). For example, a behavior-analytic intervention is *applied* if the target behaviors are socially important, and it is *effective* if the results of the intervention are practically useful, each of which is supported by incorporating client values into the decision-making process. A behavioral intervention program is considered *analytic* if there is a believable demonstration of environmental control over the behavior change and that the intervention per se was responsible for the change, which requires the behavior analyst to evaluate the best available evidence relevant to a given problem, including ongoing data monitoring. Interventions must also be *technological* and *conceptually systematic*, which require the behavior analyst to rely on existing bodies of research, as well as their larger repertoire of procedures and principles. In sum, by using one's clinical expertise to identify the best available evidence while actively considering client values and context, applied behavior analysts will ensure that their practice is aligned with the core tenets of ABA, as well as the key ethical principles of responsibility and competence.

Second, the processes involved in EBP of ABA are likely to support behaviors that are directly aligned with the Ethics Code (BACB, 2020). For example, Ethics Code Item 2.01 stipulates that behavior analysts should provide services that are based on research literature and are conceptually systematic. Ethics Code Item 2.14 states that behavior-change interventions should be based on assessment results and be adapted to the diverse needs of the client. Item 2.18 requires that behavior analysts use ongoing progress monitoring to demonstrate the effects of the treatment (BACB, 2020). The process

of EBP in ABA provides a framework for implementing these, and numerous other, Ethics Code items. For example, using the *best available evidence* ensures that treatments are based on the research literature, and incorporating *client values and context* ensures that treatments are adapted to the client. When comparing the Ethics Code to this framework, it becomes clear that using EBP of ABA promotes ethical decision making in accordance with the Ethics Code. It should be noted that EBP of ABA does not necessarily include *all* of the standards outlined in the Ethics Code, but rather can provide a framework to guide ethical decision making that is in line with the Ethics Code. Further, EBP of ABA is likely to support ethical decision making that is flexible enough to offer guidance as the Ethics Code itself continues to change to meet the changing needs of the profession.

A third way in which EBP of ABA can support ethical decision making is in the context of training future behavior analysts. The processes involved in EBP of ABA also pertain to many of the items on the Task List (BACB, 2017). For example, Task List Item H-2 states, "Identify potential interventions based on assessment results and the best available scientific evidence" (BACB, 2017). Similar to the Ethics Code (BACB, 2020), the Task List includes multiple items related to problem solving and decision making. For these items there is no one single "right" response, as the "correct" response will vary depending on the specific situation (e.g., depending on the best available evidence, client values and context, and one's clinical expertise). EBP of ABA offers a framework for supporting the training of responsible and competent behavior analysts by providing them with the behavioral repertoire to successfully respond to Task List items that are decision and process oriented.

Fourth, training behavior analysts to engage in EBP of ABA can facilitate communication and collaboration across disciplines, which will help promote justice and access to relevant services and also aligns with Ethics Code Item 2.10—collaborating with colleagues (BACB, 2020). It is common for behavior analysts to interact with professionals in an interdisciplinary setting, such as collaborating with a speech-language pathologist (SLP) or an occupational therapist during an individual education plan (IEP) meeting. As outlined by Brodhead (2015), behavior analysts who carefully consider the client's values and available evidence before expressing their professional opinion and recommendations may be more successful in interdisciplinary settings. Additionally, because many other helping professions are already using this EBP framework (e.g., APA, 2017; ASHA, 2004; Institute of Medicine, 2009), behavior analysts who engage in EBP of ABA are likely to have a common vocabulary with which to propose treatment ideas, further supporting successful collaborative relationships. Each profession can describe its decision making in terms of the best available evidence, client values and context, and clinical expertise. Indeed, the Association for

Applied Behavior Analysis Practice Board published a white paper outlining the benefits of EBP of ABA for supporting successful teamwork and collaboration between behavior analysts and SLPs (Spencer et al., 2021).

In the next section of this article, we provide explicit direction on how behavior analysts can engage in EBP of ABA when solving clinical problems. The remainder of this article is organized by each of the critical components of EBP of ABA (i.e., best available evidence, client values and context, and clinical expertise and professional judgment). Within these sections, we will briefly define each component and outline a specific framework for professional behavior. We will also link aspects of EBP of ABA to the underlying ethical principles and the Ethics Code (BACB, 2020) throughout the article to support behavior analysts in engaging in ethical practice; however, due to the iterative and overlapping nature of EBP of ABA, it is outside the scope of this article to do so exhaustively. It is important to note that EBP of ABA is a broad and nuanced framework; each component of EBP of ABA relates to multiple aspects of ethical decision making, and many of the ethical principles and Ethics Code items fall under more than one aspect of EBP of ABA. Much like ethical decision making, EBP of ABA is ongoing and iterative and cannot be prescribed without the consideration of context. Rather, EBP of ABA involves a flexible repertoire controlled by variables associated with the aforementioned three components in service of providing the best possible outcomes for clients. The behaviors outlined here are *not* intended to serve as task analyses to be followed in a specific order; rather, they are a suggested framework that should be used fluidly and will benefit the ethical decision-making process at multiple points in the life of a given case or situation.

Best Available Evidence

Best available evidence occupies a central role in EBP of ABA decision making. Although best available evidence necessarily includes ESTs, the terms are not synonymous and should not be used interchangeably. As stated earlier, ESTs are specific treatments that have undergone systematic investigation and have met standardized criteria of effectiveness (APA Presidential Task Force on Evidence-Based Practice, 2006). For example, the Council for Exceptional Children (CEC) specifies that a practice can be considered "evidence based" (i.e., an EST) if it benefits from a body of research that meets certain standards across at least five studies, conducted by at least three different researchers, and includes a total of at least 20 participants across the studies (Horner et al., 2005). Best available evidence is a broader term that encompasses the range of evidence that a behavior analyst is likely to encounter when solving a clinical problem. In some cases, an EST may have been identified that addresses the particular problem, with the particular type of client (including variables relevant

to both treatment efficacy and client values), in the particular type of context; but in other cases, the behavior analyst must rely on individual research studies that do not perfectly match the clinical situation and must integrate other sources of evidence. As the term itself states, a behavior analyst engaging in EBP of ABA is responsible for identifying the available evidence, judging the resulting evidence for "bestness," and using that determination to guide treatment decisions. Sometimes this process will lead the behavior analyst to systematic reviews that identify an EST, but there are likely to be other clinical problems where the behavior analyst will rely on other sources of evidence. We suggest four categories of behavior that a behavior analyst can engage in to identify and use the best available evidence (described in more detail in what follows; see also Table 1). Generally, this component of EBP of ABA supports behavior analysts in the service of the core ethical principles of professional integrity, responsibility, competence, and pragmatism, in addition to the analytic and effective dimensions (Baer et al., 1968) and numerous Ethics Code items (BACB, 2020). Table 1 summarizes these behaviors along with selected relevant ethical principles and Ethics Code items.

Behavior 1: Formulate the Search Question

The first step in identifying the best available evidence is to create a specific search question. In general, there are two types of questions that a behavior analyst might ask: problem-based questions and treatment-based questions (Spencer et al., 2012). In a problem-based question, the behavior analyst will ask about the best intervention to solve a specific problem. For example, the behavior analyst might ask, "What is the best method for teaching conditional discriminations to children with language delays?" In a treatment-based question, the behavior analyst will ask about the effectiveness of a specific intervention. For example, the behavior analyst might ask, "How effective is stimulus fading in teaching conditional discriminations to preschoolers with language delay?" For either type of question, the behavior analyst will need to define or identify similar components (Spencer et al., 2012). Each search question should identify the population of interest (e.g., young children with language delays), the desired outcome (e.g., acquisition of conditional discriminations), and the important features of the setting (e.g., center-based clinic providing one-on-one intervention services). This information is important for guiding the decision-making process and will provide a goal for the search itself.

Behavior 2: Search for Available Evidence

Once the behavior analyst has formulated the search question, the next step is to use the search question to conduct the search

Table 1 Summary of the framework supporting best available evidence

Best available evidence	Ethical principles	Ethics Code items (BACB, 2020)
(1) Formulate the search question. (2) Search for available evidence. (3) Assess the available evidence for bestness. (4) Collect data and use ongoing progress monitoring.	Professional integrity Responsibility Competence Pragmatism	1.03 Accountability 2.01 Providing effective treatment 2.13 Selecting, designing, and implementing assessments 2.14 Selecting, designing, and implementing behavior-change interventions 2.17 Collecting and using data 2.18 Continual evaluation of the behavior-change intervention 4.08 Performance monitoring and feedback 4.10 Evaluating effects of supervision and training

itself. When searching for available evidence, it is important to note that there are several different types or sources of evidence, and not all sources are created equal. Table 2 outlines the general categories of sources of evidence. In general, all sources of evidence should be viewed through the lens of the underlying concepts and principles of behavior analysis. For example, specific research articles and a systematic review might report consistent positive effects of the use of rewards following desired behavior, and this would be consistent with the concept of positive reinforcement. This will help to ensure that all evidence is understood within the conceptually systematic framework of ABA (BACB, 2020, Items 2.01, 2.14).

Individual client history should also be incorporated as a source of evidence for evaluating the potential utility of any given intervention (BACB, 2020, Items 2.14, 2.19). Knowing a client's history with respect to behavior-analytic interventions will better enable the practitioner to assess the available evidence for the best option (Wilczynski, 2017). For example, knowing which other treatments have been attempted, and with what levels of success, will provide useful information when it comes to selecting an intervention. Assessing client history also closely aligns with assessing client values and context, described in what follows.

Beyond the basic concepts, principles, and client history, the sources of evidence that are likely to be the most useful are systematic literature reviews and meta-analyses that have used systematic methods for analyzing the effectiveness of a given intervention. When systematic literature reviews and meta-analyses are not available for the specific problem a practitioner is working on, then other sources of evidence are likely to be useful, including narrative reviews, practice guidelines, individual peer-reviewed articles, discussion papers, textbooks, and practice manuals (see Slocum et al., 2014, for more information regarding sources of evidence). Readers should understand that there are likely several effective approaches to searching the literature, and the search process should generally be flexible and iterative (see Carr & Briggs, 2010, and Briggs & Mitteer, 2021, for more information on methods for searching the literature).

Behavior 3: Assess the Available Evidence for Bestness

After formulating the search question and conducting the search, the next step is to assess the available evidence for bestness. As discussed by Slocum et al. (2014), the quality of sources of evidence will range along two dimensions: (a) certainty of the evidence and (b) relevance of the evidence. *Certainty* is similar to internal validity and refers to the extent to which we—as consumers of the research—can trust that the results of an investigation are a function of the treatment or procedure. *Relevance* is similar to external validity and refers to the extent to which the sources of evidence have characteristics that match the specifics of the particular treatment setting, population, target behaviors, and so forth. The "best" evidence will be the sources that are both highly certain and highly relevant (in other words, evidence that works and is also likely to work for your client). It is outside the scope of this article to provide a detailed outline on how to assess the certainty and relevance of evidence; however, the following resources provide standards for evaluating research: Cook et al. (2014), Horner et al. (2005), Kratochwill et al. (2013), and What Works Clearinghouse (2017). Assessing the available evidence for bestness will support behavior analysts in providing the most effective treatment for their clients (BACB, 2020, Item 2.01).

Behavior 4: Collect Data and Use Ongoing Progress Monitoring

Once the behavior analyst has searched the literature and identified the best available evidence, the next step is to implement the treatment based on the results of their search. However, consideration of the best available evidence should not stop once a treatment is in place. The final, and perhaps most important, source for demonstrating that a given treatment is based on the best available evidence is local progress monitoring that demonstrates that the treatment is indeed effective for that particular client. Ultimately, the best evidence of the effectiveness of a given treatment is data demonstrating socially valid improvements in the client's behavior. Taking

Table 2 Sources of evidence

Source	Description	Recommended utility
Concepts and principles	Describe behavior–environment relations that are broadly generalizable; based on an extremely large body of empirical research and largely agreed on by the field as a whole	Should be used alongside other sources of evidence and should not be used in isolation as a single form of evidence
Client history	Provides relevant information about the client including, but not limited to, descriptions of target behaviors, important aspects of their immediate environment, general treatment history, and specific history of treatments used and their outcomes	Should be gathered first and used with all clients
Systematic review and meta-analysis	Provides comprehensive information regarding the effectiveness of interventions and procedures; uses standardized and systematic methods to search for, identify, and summarize the existing literature; undergoes a thorough peer-review process; meta-analyses include statistical measures of effectiveness that summarize the entire body of research under investigation	Should be used as a source of evidence if available
Narrative review	Provides a summary and interpretation of selected literature regarding the topic discussed; literature is selected by the author, and the selection and summary process may or may not have been guided by systematic methods; undergoes peer review (if published in a scholarly journal)	Can be useful as a source of evidence, especially when systematic reviews are not available
Practice guidelines	Provide recommendations based on the consensus of a panel of experts; are rooted in recent and formative research but do not use systematic methods and do not undergo thorough peer review	
Peer-reviewed research article	Provides discussion and rationale for a specific research question and provides technological detail for how the procedures were implemented; provides discussion of limitations and implications of their findings; undergoes a thorough peer-review process; represents a detailed demonstration of the effects of a procedure or treatment on a small scale (i.e., does not offer comprehensive information regarding a body of evidence)	
Discussion paper	Provides conceptual discussion regarding specific topics; although empirical demonstrations are often incorporated, conclusions are generally logically derived; often used to call for further investigation or action with respect to the topic; undergoes peer review (if published in a scholarly journal)	
Textbook	Provides comprehensive information regarding a breadth of topics; discussion and conclusions are typically based on well-established concepts and principles, formative empirical research, and logic; typically written by experts in the field but does not undergo thorough peer review	
Practice manual	Provides specific "how-to" information to guide practice in a particular intervention (or set of procedures); information may be based on a comprehensive body of research but may also be based on the author's clinical experience and expertise; manuals may or may not have been empirically validated in and of themselves; does not undergo thorough peer review	

Note. This table is based on information provided in Slocum et al. (2014, 2012) and Wilczynski (2017)

steps to continuously monitor ongoing progress is both pragmatic and responsible, and it is also in line with several Ethics Code items (e.g., BACB, 2020, Items 1.03, 2.01, 2.13, 2.14, 2.17, 2.18, 4.08).

There are multiple sources of data that will be useful for monitoring the effectiveness of a treatment at the level of the individual case. The first is data collected on the target behavior itself. Although this should go without saying, we will say it and stress it here: Evidence-based behavior analysis must always include the collection and analysis of ongoing data on the target behavior (BACB, 2020, Items 2.17, 2.18). If a treatment is worth doing, it is worth taking data. Behavior analysts should be thoughtful in how they design their data collection systems, to ensure that they have enough high-quality data to evaluate the effects of the intervention and support ongoing

decision making. This does not mean that behavior analysts must collect continuous and direct data 100% of the time; rather, this means that the behavior analyst should establish data collection and analysis systems that meet the needs of the client and treatment program. Behavior analysts must also make sure that they are graphing the data and using visual analysis to evaluate the data on a sufficiently frequent basis to support decision making. The exact data collection and analysis systems will necessarily vary across cases and should be individualized.

Obtaining measures of reliability and fidelity will also support ongoing treatment decisions and accountability (BACB, 2020, Item 1.03). For example, if the data on the target behavior reveal that a treatment is not working, there can be several reasons for this. It may be the case that the treatment is simply

not effective for that client. However, it might also be the case that the treatment is effective, but the data collected are not reliable and thus are not accurately reflecting changes in the target behavior. Or it could be the case that the treatment would be effective, but the client is not actually contacting the treatment due to lapses in the fidelity of its implementation (e.g., Vollmer et al., 2008). Collecting reliability and fidelity data will allow the behavior analyst to assess the quality of the treatment data for each individual case and will allow the behavior analyst to make appropriate treatment decisions. Each of the situations listed previously should result in a different action by the behavior analyst—whether it be to change the treatment, revise the data collection system and retrain data collectors, or provide additional training for those implementing the procedure. These behaviors of attending to the reliability of data and the fidelity of treatment implementation support Ethics Code Items 2.17 and 2.18 (BACB, 2020), which call for collecting and using data to continually evaluate treatment implementation.

Behavior analysts should also include measures of social validity as a source of evidence at the local level. Practitioners should assess social validity early in the treatment process and continue to assess social validity throughout the course of treatment. This could be accomplished through frequent brief surveys and structured interviews, which will enable behavior analysts to make necessary changes to improve social validity and promote good outcomes (Schwartz & Baer, 1991). We will revisit social validity in the next section.

Client Values and Context

Within EBP of ABA, as behavior analysts identify clinical problems and decision points, they must consider the context in which behavior occurs, including the client values that determine social validity. Responding to client values and context is essential to the success of every intervention behavior analysts implement. Behavior analysts are tasked with providing individualized services to clients (BACB, 2020, Items 2.13, 2.14, 4.06) and are best prepared to individualize their services if they are aware of the context in which those services will be provided and in touch with the client's needs, resources, values, and preferences. We refer to these contextual factors as "client values and context," meaning all the contributing factors, barriers, resources, environmental contingencies, and ecological factors potentially influencing the client's behavior-change program. We suggest five categories of behavior that a behavior analyst can engage in to support the client values and context component of EBP of ABA. This component of EBP of ABA will help practitioners to act in accordance with the underlying ethical principles of benefitting others, doing no harm, dignity, autonomy, justice, and pragmatism and to be in line with the applied, effective, and generality dimensions

(Baer et al., 1968). Table 3 summarizes these behaviors along with selected relevant ethical principles and Ethics Code items.

Behavior 1: Clearly Define Clients

Behavior analysts must identify who their client is. Indeed, BCBAs are tasked with defining clients as whoever receives services and defining stakeholders as anyone who is impacted by the services delivered to the client (BACB, 2020, Item 3.02). For example, a BCBA may be hired by parents to work with a child engaging in problem behavior. Part of the services may involve parent and family training, including siblings. The entire family will benefit from services and thus might be conceptualized as "clients," but it is the child engaging in problem behavior (for which services were sought) who will benefit the most from the services. In this case, the behavior analyst would define the child as the client and the family as the stakeholders. Clearly defining clients also supports behavior analysts in behaving in accordance with additional Ethics Code items, such as 1.04 (practicing within a defined role), 1.11 (multiple relationships), and 3.08 (responsibility to the client with third-party contracts for services), by ensuring that the behavior analyst is clear on who the client is (BACB, 2020); they will be better able to delineate and behave within the roles and responsibilities of all parties involved in treatment.

Behavior 2: Consider Contextual Variables

Behavior analysts are also tasked with identifying the necessary conditions for success (BACB, 2020, Item 2.16), which may include assessing family resources for implementation, caregiver and other stakeholder preferences, and the influence of related service providers. Behavior analysts should conduct an ecological assessment to help identify variables related to the contextual fit of assessments and interventions (Mayer et al., 2019). Behavior analysts should also consider the client's history with behavioral interventions as part of the context in which current assessments and interventions will be implemented. By interviewing the clients and stakeholders, the behavior analyst could identify important contextual variables and potential patterns. For example, the parent may respond that they tried other interventions, but data collection was too onerous, or that they tried an intervention that seemed ineffective.

Once assessments and interventions have been identified, it is important to identify variables related to contextual fit. *Contextual fit* is defined as the level of congruence between the intervention plan and the skills, resources, values, and routines of those who implement the intervention (Albin et al., 1996). The degree to which an intervention "fits" a context may greatly influence the social validity of the

Table 3 Summary of the framework supporting client values and context

Client values and context	Ethical principles	Ethics Code items (BACB, 2020)
(1) Clearly define clients. (2) Consider contextual variables. (3) Enhance communication and interpersonal skills. (4) Develop and advance cultural responsiveness and humility. (5) Assess and behave in accordance with social validity.	Benefitting others Doing no harm Dignity Autonomy Justice Pragmatism	1.04 Practicing within a defined role 1.07 Cultural responsiveness and diversity 1.08 Non-discrimination 1.10 Awareness of personal biases and challenges 1.11 Multiple relationships 2.01 Providing effective treatment 2.08 Communicating about services 2.09 Involving clients and stakeholders 2.11 Obtain informed consent 2.12 Considering medical needs 2.16 Describing behavior-change interventions before implementation 2.17 Collecting and using data 2.19 Addressing conditions interfering with service delivery 3.01 Responsibility to clients 3.02 Identifying stakeholders 3.03 Accepting clients 3.08 Responsibility to the client with third-party contracts for services 3.09 Communicating with stakeholders about third-party contracted services 4.07 Incorporating and addressing diversity

intervention, the implementation fidelity, and ultimately the overall outcomes of the intervention. For example, if a behavior analyst recommends that a parent implement an antecedent intervention requiring them to provide noncontingent attention to a child on a rich schedule of reinforcement, without considering that the parent has three other children, including an infant, it is unlikely that the intervention will be implemented with fidelity. Consider this example in terms of overall evidence-based decision making: The antecedent intervention may have strong empirical support, and the behavior analyst may have clinical experiences that affirm this intervention as likely to be effective, but if the contextual fit and client values are not considered, this intervention is less likely to succeed. Additional Ethics Code items that are supported by considering contextual variables are 2.12 (considering medical needs) and 2.19 (addressing conditions interfering with service delivery; BACB, 2020).

Behavior 3: Enhance Communication and Interpersonal Skills

It is essential for behavior analysts to have strong interpersonal skills. For example, in order to understand the context and client values, the behavior analyst must build rapport and trust with the client as a foundation for honest and open conversation about values and contextual variables. Researchers have attempted to operationalize interpersonal skills and have highlighted the importance of behavior analysts receiving training and supervision specifically designed to improve interpersonal skills (Taylor et al., 2018). Taylor et al. (2018) surveyed caregivers regarding the interpersonal behaviors of behavior analysts and identified skills for improvement. They noted that some behavior analysts may need improvement in areas such as inquiring about treatment satisfaction, clarifying roles, and compromising during disagreements (Taylor et al., 2018). They also discussed barriers to improving interpersonal skills, including lack of training on building therapeutic relationships and funding constraints resulting in limited time to devote to family and parent training. Ultimately, increasing interpersonal skills in communication with stakeholders and collaborators may increase a behavior analyst's ability to assess and identify client contextual factors. See Taylor et al., LeBlanc, Taylor, and Marchese (2020b), and Callahan et al. (2019) for suggestions regarding expanding interpersonal skills.

In order to maximize clients' outcomes and influence clients' lives, it is important that consumers understand what is being communicated to them. This requires ensuring that our verbal behavior is comprehensible and functional for consumers and stakeholders (Benazzi et al., 2006), and supports

Ethics Code Item 2.08 (communicating about services; BACB, 2020). Behavior analysts must be able to communicate with technological precision and remain conceptually systematic (BACB, 2020, Items 2.01, 2.14) while using language that is accessible to their audience. It is important to take a functional approach rather than a topographical approach to communication (Foxx, 1996)—the measure of our communication is the behavior of the audience, not its "behavioral purity." Behavior analysts must learn to fluently translate behavior-analytic concepts and principles into useable and understandable terms to support clear communication with consumers and stakeholders (BACB, 2020, Items 2.08, 2.16, 3.09; Foxx, 1996). In this sense, behavior analysts must have bilingual verbal repertoires—one language for speaking with other behavior analysts and another for speaking to consumers and stakeholders—and the ability to code switch depending on the audience.

Behavior 4: Develop and Advance Cultural Responsiveness and Humility

The EBP of ABA component of client values and context also necessitates practicing cultural responsiveness and humility (BACB, 2020, Items 1.07, 1.10, 4.07). As demographics continue to shift in the United States, and as the field of behavior analysis grows worldwide, it is increasingly evident that developing robust and effective skills to work within culturally and linguistically diverse settings is vital to the successful practice of behavior analysis. Rosenberg and Schwartz (2019) articulated the importance of the topic well: "The need to understand and balance a respect for the . . . worldviews of clients is paramount in entering into a productive professional relationship" (p. 4). Although the literature base relating to culture and diversity in behavior analysis is small, it is growing steadily. We will briefly outline a few resources here, and we encourage readers to seek out additional resources.

Fong and colleagues have highlighted the benefits of increasing cultural awareness (Fong et al., 2017) and suggested that a step toward developing cultural awareness and sensitivity is for behavior analysts to recognize their own cultural background (Fong et al., 2016). They suggested behavior analysts begin by tacting their personal (and perhaps their family of origin's) values, preferences, and culturally informed behavioral repertoires. This aligns with the ethical responsibility for behavior analysts to evaluate their own biases (BACB, 2020, Items 1.07, 1.10). One way for behavior analysts to do this is to engage in regular discussions with colleagues and members of professional networks to describe and discuss both their personal cultural values and their diverse interactions with clients (Fong et al., 2016). Leland and Stockwell (2019) offered a similar approach, via a self-assessment tool,

to support practitioners in cultivating practices to embrace and support transgender and gender-nonconforming individuals.

An additional approach that behavior analysts can take toward shaping their own culturally responsive and humble behavior is to engage in reflective practice (Akpapuna et al., 2020; Cirincione-Ulezi, 2020). Cirincione-Ulezi (2020) defined *reflective practice* as "reflection upon one's personal beliefs, thoughts, and feelings, as well as the knowledge of how these beliefs and practices affect others" (p. 723). Reflective practice entails systematically looking back and evaluating your thoughts and feelings regarding your own decisions and actions and the outcomes of those decisions and actions. Practitioners can use reflective practice to self-examine and identify areas for growth in working with culturally and linguistically diverse populations, while also ensuring their behavior is aligned with Ethics Code Item 1.07—cultural responsiveness and diversity (BACB, 2020). We will revisit reflective practice in the section of this article on clinical expertise and professional judgment.

A third approach that practitioners can take is to measure outcomes related to diversity within their own practice. Akpapuna et al. (2020) outlined an approach to identifying social diversity outcomes (i.e., outcomes related to equity) and also provided a table (Table 2 in Akpapuna et al., 2020) of possible measures for organizations to track. These recommendations are readily applicable to a wide range of organizations and behavior-analytic practices. Of course, measurement is only one step in a larger process of growing cultural responsiveness and creating an equitable practice; Akpapuna et al. offered additional guidance on steps beyond measurement.

A 2019 issue of *Behavior Analysis in Practice* (Vol. 12, Issue 4) also provides several resources for behavior analysts seeking to understand and expand their cultural humility repertoire and may serve as a starting point. Several recently published textbooks also offer excellent resources: Conners and Capell (2020) recently published a book exploring issues related to multiculturalism and diversity within ABA, and LeBlanc, Sellers, and Ala'i (2020a) offered a chapter on culture and diversity in the context of supervision. Behavior analysts might also review the literature of related helping professions, such as social work, for guidance and opportunities for strengthening cultural responsiveness, in addition to seeking out content that is published in behavior-analytic journals and books pertaining to cultural humility.

Behavior 5: Assess and Behave in Accordance With Social Validity

The aforementioned behavioral repertoires are all closely related to one of the foundational tenets of applied behavior analysis: ensuring our work is *applied* (Baer et al., 1968), meaning that the behaviors of concern are relevant to the

priorities and interests of society and of direct benefit to the clients. Ensuring our decision making is aligned with the client's values and context is closely tied to assessing the social validity of our decision making and behavior-analytic practice. Doing so will support behavior analysts in acting in accordance with several Ethics Code items, including 2.09 (involving clients and stakeholders) and 3.01 (responsibility to clients; BACB, 2020).

When engaging in EBP of ABA, behavior analysts may ask themselves three questions to determine the social validity of their practice (Wolf, 1978). First, are the goals socially significant? Behavior analysts ought to ensure they are focusing on targets for behavior change that are meaningful for the client and stakeholders. Second, are procedures and techniques acceptable to consumers? To ensure fidelity of implementation, the procedures and methods behavior analysts use need to be acceptable from the perspective of the client. This highlights the importance of involving stakeholders in the treatment-development process. Ensuring that consumers are fully supportive of all aspects of our procedures may make the difference between positive long-term outcomes and abandoned interventions. Third, is the magnitude of outcomes socially important? Behavior analysts are not concerned with mere reductions in problem behavior or increases in appropriate behavior if the magnitude of change is not socially meaningful. For example, if behaviors were operationalized in such a way that a graph measuring outcomes depicts robust behavior change, yet the client is still experiencing distress and the parents report being unhappy with the results, then the job of the behavior analyst is not complete. A change in behavior is only as meaningful as the consumers' interpretation of that change. Behavior analysts should consider assessing the social validity of goals, procedures, and magnitude of outcomes at multiple levels, including that of the client, the immediate stakeholders, the treatment team, the behavior analyst themselves, and the community (Bernstein, 1989; Schwartz & Baer, 1991).

Clinical Expertise and Professional Judgment

The third component of EBP of ABA involves the expertise and skilled decision making on the part of the behavior analyst. Most writings on EBP of ABA refer to this third component as either clinical expertise (e.g., Slocum et al., 2014) or professional judgment (e.g., Spencer et al., 2012). Generally, these two terms seem to be presented as synonyms; however, clinical expertise and professional judgment may be viewed as two distinct yet inextricably related categories of behavior that come together to make up the third pillar of EBP of ABA. Clinical expertise is the overall competence established through formal education, supervision, and CE efforts, whereas professional judgment encompasses the decisions made on a daily basis. In other words, clinical expertise is the body of knowledge and skills gained through education and experience, and professional judgment is the on-the-ground

application of that knowledge. Together, clinical expertise and professional judgment compose the professional repertoire of the behavior analyst. EBP of ABA recognizes this repertoire as one of the three pillars of decision making. Here, we assume that behavior analysts have a solid foundation of knowledge and training and have already begun to use their professional judgment when making clinical decisions. We present six behaviors to help guide behavior analysts in expanding their clinical expertise and honing their professional judgment. Generally, this component of EBP of ABA supports behavior analysts in the service of the core ethical principles of doing no harm, professional integrity, responsibility, competence, and pragmatism; the technological and conceptually systematic dimensions of ABA (Baer et al., 1968); and numerous Ethics Code items (BACB, 2020). Table 4 summarizes these behaviors, along with selected relevant ethical principles and Ethics Code items.

Behavior 1: Assess and Practice Within One's Scope of Competence

It is vital that behavior analysts are aware of their scope of competence and restrict their practice to that scope (BACB, 2020, Items 1.05, 4.02, 6.06). Scope of competence is defined as the range of activities that a behavior analyst can perform proficiently (Brodhead, Quigley, & Wilczynski, 2018c). That is, practicing within one's scope of competence means restricting services to those that the behavior analyst can reliably offer with high levels of treatment integrity, consistent positive outcomes, and nuanced decision making. For example, a behavior analyst may have extensive training and experience providing early intensive behavioral intervention (EIBI) to children with disabilities but little or no experience treating severe feeding disorders. For this behavior analyst to practice within their scope of competence, they would provide EIBI and would either refer feeding cases to another behavior analyst or seek training and supervision in treating feeding disorders. Brodhead, Quigley, and Wilczynski (2018c) provided a discussion on the risks of practicing outside one's scope of competence and also offered guidance on assessing and determining one's scope of competence.

Although it is important for behavior analysts to identify and practice within their scope of competence, this is not to state that behavior analysts are restricted to only those activities for the entirety of their career. Recognizing the boundaries of one's scope of competence can also help a behavior analyst identify new areas in which to expand their scope of competence. There are many reasons that a behavior analyst might wish to expand into new areas of practice, and it is vital to do so in an ethical manner. Brodhead, Quigley, and Wilczynski (2018c) and LeBlanc et al. (2012) offered discussions on how to ethically assess and expand one's scope of competence.

Table 4   Summary of the framework supporting clinical expertise and professional judgment

Clinical expertise and professional judgment	Ethical principles	Ethics Code items (BACB, 2020)
(1) Assess and practice within one's scope of competence. (2) Maintain regular contact with a breadth of scholarly literature. (3) Engage in ongoing professional development. (4) Maintain contact and familiarity with ethical guidelines. (5) Create and maintain effective behavior-change systems. (6) Activate and refine professional judgment.	Doing no harm Professional integrity Responsibility Competence Pragmatism	1.01 Being truthful 1.02 Conforming with legal and professional requirements 1.03 Accountability 1.05 Practicing within scope of competence 1.06 Maintain competence 1.10 Awareness of personal biases and challenges 2.10 Collaborating with colleagues 2.15 Minimizing risk of behavior-change interventions 2.17 Collecting and using data 2.18 Continual evaluation of behavior-change interventions 3.03 Accepting clients 3.11 Documenting professional activity 4.02 Supervisory competence 4.05 Maintaining supervision documentation 4.06 Providing supervision and training 4.10 Evaluating effects of supervision and training 6.01 Conforming with laws and regulations in research 6.06 Competence in conducting research

Behavior 2: Maintain Regular Contact With a Breadth of Scholarly Literature

To support the maintenance and expansion of a behavior analyst's scope of competence, it is imperative that they contact contemporary research and scholarly literature on a regular basis (BACB, 2020, Item 1.06). Contacting the literature also supports Ethics Code Items 2.01 (providing effective treatment) and 2.13 and 2.14 (selecting, designing, and implementing assessments and behavior-change interventions; BACB, 2020). Behavior analysts should read new research often and ensure that they read recent literature on a variety of topics. Many practicing behavior analysts may share the experience that, although it is rather easy to be in contact with current literature during graduate school, it is quite challenging to maintain the same level of contact once they have graduated and are working in the field. One common barrier is that access to current literature may become restricted once the behavior analyst graduates and no longer has access to university libraries and resources. Briggs and Mitteer (2021) offered an updated discussion of barriers to contacting contemporary literature and how to address them. For example, they suggest setting up table of contents alerts to be delivered to one's email when new articles and journal issues are released online. Additionally, the BACB offers a free search engine and access to certain journals through the certificant portal. Another suggestion is to subscribe to one or more journals that are likely to publish content that is highly relevant to one's work. Behavior analysts can also use professional networks to support contacting the literature by emailing colleagues to ask for support in accessing literature.

Even with access to relevant literature, practitioners face difficulty with time constraints. When working as clinicians, behavior analysts juggle myriad professional activities, making it difficult to find time for regular reading. Although, regrettably, there is no way to make more time, it is possible to find ways to organize your available time to better support important activities such as regular reading. One strategy is to proactively set aside time for reading and protect that time in the same manner that one protects time for important meetings—that is, do not schedule over reading time in the same manner that you do not schedule over an IEP meeting (Briggs & Mitteer, 2021). Using self-management techniques can help establish contingencies to support this behavior (e.g., goal setting and self-monitoring). An additional strategy is to create journal reading groups (JRGs) that meet on a regular basis (Briggs & Mitteer, 2021; Parsons & Reid, 2011). Parsons and Reid (2011) offered guidance on how to establish and structure JRGs and also provided evidence of the effectiveness of JRGs for enhancing professional knowledge. A potential added benefit of JRGs is that, if a member of the group is an authorized CE (BACB ACE) provider, JRGs could be used to earn CE units toward recertification.

Funding constraints pose a significant additional problem when considering making time to contact literature. The financial contingencies that often operate around behavior-analytic practice do not support behavior analysts spending time on reading scholarly literature. Put simply, reading the literature is not a billable service. If funding constraints hinder opportunities for making time to search and read the literature, the behavior analyst faces an ethical dilemma. The behavior analyst may request and advocate for additional professional time to contact relevant literature, they may advocate for creating a JRG among a group of practitioners, or they may deem it necessary to contact the literature outside of their professionally compensated working hours.

Behavior 3: Engage in Ongoing Professional Development

Ethics Code Item 1.06—maintaining competence—explicitly states appropriate methods for engaging in ongoing professional development (BACB, 2020), and we will not repeat those here. However, we do wish to emphasize the importance of engaging in professional development activities with purpose. That is, it is not sufficient to attend talks at conferences simply for the sake of earning CEs to check the box toward recertification. Behavior analysts should attend and actively engage in a variety of high-quality professional development events with the goal of refining and expanding their existing professional repertoires. Becerra et al. (2020) offered guidance on how to use conferences as a meaningful way to engage in professional development.

In addition to attending professional development events, behavior analysts can deepen their professional development through involvement in local and national organizations, special interest groups, and broader communities such as the #DoBetter movement (Kaminski, 2018). Although these activities may not always offer CEs, they do offer opportunities to engage with and learn from other professionals, strengthen one's repertoire, and expand one's professional network. Taking an active part in ongoing professional development will also aid behavior analysts in forming effective collaborative relationships (BACB, 2020, Item 2.10). Importantly, one should not confuse the form (obtaining CEs) with the ethical function of continually improving one's professional practice.

Behavior 4: Maintain Contact and Familiarity With Ethical Guidelines

The activities of all behavior analysts are bound by ethical guidelines, whether they are experimental researchers working with nonhuman animals, consultants working in organizational settings, or BCBAs working with children with disabilities. Behavior analysts engaging in EBP of ABA must be familiar with the relevant ethical guidelines for the settings and activities in which they work (BACB, 2020, Items 1.02, 6.01). Behavior analysts who hold certifications and licensure are likely required to obtain CEs related to ethical topics, thus supporting this aspect of clinical expertise. Similar to our previous emphasis, we recommend that behavior analysts actively engage in ethics CE events with the purpose of sharpening and expanding their knowledge and ethical behavior, rather than passively meeting the minimum requirements for recertification. Additional methods for supporting meaningful familiarity with ethical guidelines include using JRGs or local review committees as additional opportunities to read about and discuss ethical issues and becoming involved in ethics committees or special interest groups.

Behavior 5: Create and Maintain Effective Behavior-Change Systems

To ensure effective and efficient behavior-change programs, behavior analysts should establish and maintain systems to support implementation, data collection, management, training, and supervision. Such systems serve to establish and maintain contingencies that support the appropriate behaviors of those involved in the behavior-change programs. Several items in the Ethics Code also highlight the importance of creating systems for promoting effective and ethical behavior change (e.g., BACB, 2020, Items 2.05, 3.11, 2.13, 2.14, 4.05, 4.06). It is necessary to have systems in place to support such ethical practice. For example, behavior analysts should ensure that they have systems in place to support effective supervision practices, including training, performance management, and ongoing feedback. Another example is to have systems in place to ensure the quality and accuracy of data collection (i.e., reliability and interobserver agreement) and the fidelity of treatment implementation.

Behavior 6: Activate and Refine Professional Judgment

While behavior analysts build and maintain their clinical expertise, they bring that expertise to bear through their professional judgment in making everyday clinical decisions. Professional judgment is where "the rubber meets the road"; it is where all aspects of the EBP of ABA process come together to result in effective decision making. Professional judgment is both a local process that is driven by the problem at hand and a global process that will evolve across time as the behavior analyst shapes and refines their decision-making repertoire (Spencer et al., 2012). Each clinical problem will be different and will require different information and decisions, and at the same time, ongoing effective decision making will yield a robust and generalizable decision-making repertoire. Professional judgment at the local level—an individual case— requires that behavior analysts bring to bear all of the information they gained from the other processes of EBP in the context of the systems they have developed to support their practice. For example, professional judgment will be activated for an individual case by recognizing and defining a clinical problem, followed by identifying critical features of the context, assessing and incorporating client values, and identifying and selecting the best available evidence. The behavior analyst will then use the gathered information to select a treatment and design a protocol, implement the treatment, activate behavior-change systems to ensure proper implementation and data collection, and monitor ongoing progress. Along the way, the behavior analyst will keep their scope of competence in mind, will collaborate with their clients, and will actively plan for maintenance and generalization, as appropriate, for the new patterns of behavior. These decision-making

behaviors are supported by a community of behavior analysts who prompt, contribute to, and reinforce them.

Professional judgment will be shaped over time as the behavior analyst makes decisions and contacts the outcomes of those decisions. Behavior analysts can actively refine their professional judgment repertoire through systematic, reflective practice. As discussed previously, reflective practice involves examining actions taken, the assumptions and reasons for those actions, and the outcomes of those actions (Cirincione-Ulezi, 2020; Osterman, 1990). Behavior analysts might consider reflecting on their own practice and decision making by viewing the situation from multiple perspectives, including those of their learners and colleagues, in addition to their own (Brookfield, 1998). Reflective practice can be an individual activity and can also be a shared activity where behavior analysts share their reflections with one another in order to solicit feedback. The goal of reflective practice is to critically evaluate one's decision-making process in order to shape more effective decision making, thus ensuring ongoing evaluation, awareness, and accountability for their practice (BACB, 2020, Items 1.03, 1.10, 2.18, 4.10). Reflective practice can also support behavior analysts in evaluating their clinical practice to ensure that they are minimizing risk in behavior-change interventions (BACB, 2020, Item 2.15).

Conclusion and Future Directions

Several authors have discussed the need for resources to help develop the skills of ethical decision making in ABA (e.g., Brodhead, Quigley, & Wilczynski, 2018c; Rosenberg & Schwartz, 2019; Sellers et al., 2016). We propose EBP of ABA as a framework for supporting ethical practice. As we have described, promoting evidence-based decision making concurrently promotes ethical decision making. Each of the three components of EBP of ABA—best available evidence, client values and context, and clinical expertise and professional judgment—supports ethical behaviors in their own right. When combined, they result in a powerful process that guides decision making in alignment with the dimensions of ABA, core ethical principles, and the Ethics Code (BACB, 2020).

There are at least two characteristics of EBP of ABA that are important to highlight. First, EBP of ABA is not merely a combination of discrete behaviors or a formula to be followed precisely the same way every time. Rather, EBP of ABA is a fluid and iterative process that consists of ongoing behaviors that permeate a behavior analyst's everyday actions. Each of the three components of EBP of ABA is integral to the process and is not sufficient when used in isolation. Further, there is no "order" in which to use the three components of EBP of ABA. The three components of EBP of ABA often overlap, and a behavior analyst will need to integrate the components multiple times in the process of solving a clinical problem.

Second, although EBP of ABA supports decision making that is ethical, it is not a catchall process that will ensure that all ethical obligations have been met. EBP of ABA relates directly to many of the core ethical principles and Ethics Code items (BACB, 2020), but not to all of them. For example, EBP of ABA does not necessarily help a behavior analyst avoid exploitative or dual relationships (BACB, 2020, Items 1.11, 1.13) or prevent behavior analysts from soliciting testimonials to use in advertising (BACB, 2020, Item 5.07). EBP of ABA should exist within a larger ethical framework to support ethical decision making and does not replace the need to incorporate other processes to ensure behavior in accordance with all ethical guidelines.

Although the framework of EBP is shared across numerous helping professions (e.g., psychology, medicine, sociology), it may be considered to be in its infancy in ABA. There are a few textbooks discussing EBP of ABA (i.e., Brodhead, Cox, & Quigley, 2018a; Wilczynski, 2017), as well as a handful of published papers (e.g., DiGennaro Reed & Reed, 2008; Slocum et al., 2012, 2014; Spencer et al., 2012). This is in contrast to other fields that have more extensive literature, formal position statements from professional organizations, and multiple task forces on the subject. It is our hope that practicing behavior analysts recognize the power of this framework and further examine its utility by conducting research and engaging in public discourse on the topic. The three components of EBP of ABA, and the behaviors we described for each, are complex; it would be helpful to have more nuanced discussions of each. Although the best available evidence benefits from a large literature base, the other two components—client values and context, and clinical expertise and professional judgment—are less well specified and understood. Each warrants further discussion and elaboration.

The EBP of ABA framework may also be useful for structuring training and supervision to improve decision-making skills, rather than merely promoting knowledge acquisition. One way would be to embed EBP into behavior-analytic training by covering evidence-based decision making across courses within a course sequence. Across the course progression, educators could promote the acquisition of both knowledge of EBP and the demonstration of evidence-based decision making. For example, Slocum et al. (2014) suggested that training programs could systematically teach students to engage in, and articulate, the chain of behaviors that leads to their treatment recommendations—which is aligned with reflective practice. This problem-solving process could follow the EBP framework. Individual supervisors could also embed EBP into their supervision practice. This would provide a framework in which supervisees engage in clinical decision making by applying the concepts learned in coursework and receive feedback on the effectiveness of these behaviors. A supervisor could ensure that all supervisees are trained in EBP and systematically measure their repertoire of EBP. This presents a unique research opportunity, as student exposure to and understanding of EBP of ABA

could be an important independent variable in the examination of EBP of ABA. To support clinicians, researchers could develop checklists or decision-making models to aid in EBP of ABA while concurrently examining the effects of such tools on practitioner and client outcomes.

Declarations

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