Applied Behavior Analysis: What You Need to Know Today!

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ABA!

It's all fun and games until a BCBA figures out the function of your behavior.

Oh snap!
Objectives

- “Briefly” describe the science of behavior analysis and its four domains
- Provide a lay-person definition of Applied Behavior Analysis
- Briefly describe how the science of behavior analysis is applied for individuals with ASD
- Briefly describe qualifications for providing behavior analytic services
- State the three stages of services for NM ABA
A (not so) Brief History of Behavior Analysis
Behaviorism

It's a rather interesting phenomenon. Every time I press this lever, that post-graduate student breathes a sigh of relief.
“I know that most men, including those at ease with problems of the greatest complexity, can seldom accept the simplest and most obvious truth if it be such as would oblige them to admit the falsity of conclusions which they have proudly taught to others, and which they have woven, thread by thread, into the fabrics of their life.”

(Tolstoy, 1894)
History of Behavior Analysis

Men are built, not born.... Give me the baby, and I'll make it climb and use its hands in constructing buildings of stone or wood.... I'll make it a thief, a gunman or a dope fiend. The possibilities of shaping in any direction are almost endless...

— John B. Watson —
The strengthening of behavior which results from reinforcement is appropriately called conditioning. In operant conditioning we strengthen an operant in the sense of making a response more probable or, in actual fact, more frequent.

(B. F. Skinner)
History of Behavior Analysis

If they can't learn the way we teach, we teach the way they learn.

— Ole Ivar Lovaas —
History of Behavior Analysis

Saying "I don't believe in Behavior Analysis" is like saying "I don't believe in gravity".

Or Facebook!
History of Behavior Analysis

Psychology, as the behaviorist views it, is a purely objective, experimental branch of natural science which needs introspection as little as do the sciences of chemistry and physics....

(John B. Watson)

izquotes.com
History of Behavior Analysis
History of Behavior Analysis

Hint: This will be on the test...

• “The science in which tactics derived from the principles of behavior are applied systematically to improve socially significant behavior and experimentation is used to identify the variable responsible for behavior change.”

• “Applied behavior analysis can be fully understood only in the context of the philosophy and basic research traditions and findings from which it evolved and remains connected today.”

(Cooper, Heron & Heward pg. 7, 2007)
History of Behavior Analysis

• Six attitudes of science
  • Determinism
  • Empiricism
  • Experimentation
  • Replication
  • Parsimony
  • Philosophic doubt
History of Behavior Analysis

• Six attitudes of science
  • Determinism – the universe is a lawful and orderly place in which all phenomena occur as the result of other events
  • Empiricism
  • Experimentation
  • Replication
  • Parsimony
  • Philosophic doubt
• **Six attitudes of science**
  • Determinism
  • Empiricism – the practice of objective observation and measurement
  • Experimentation
  • Replication
  • Parsimony
  • Philosophic doubt
History of Behavior Analysis

• Six attitudes of science
  • Determinism
  • Empiricism
  • Experimentation – factors thought to be related to events are controlled and manipulated
  • Replication
  • Parsimony
  • Philosophic doubt
History of Behavior Analysis

• Six attitudes of science
  • Determinism
  • Empiricism
  • Experimentation
  • Replication – repeating of experiments
  • Parsimony
  • Philosophic doubt
History of Behavior Analysis

• Six attitudes of science
  • Determinism
  • Empiricism
  • Experimentation
  • Replication
  • Parsimony – all simple, logical explanations be ruled out before more complex or abstract explanations are considered
  • Philosophic doubt
History of Behavior Analysis

• Six attitudes of science
  • Determinism
  • Empiricism
  • Experimentation
  • Replication
  • Parsimony
  • Philosophic doubt – scientists continually question what is regarded as fact
"Doubt everything or believe everything: these are two equally convenient strategies. With either we dispense with the need for reflection."

Henri Poincare
History of Behavior Analysis
History of Behavior Analysis

Think of all the nonsense you had to learn in psychology courses. None of which was testable. None of which was measurable. We had behaviorism, Freudian psychology, all of these theories that you learn in psychology. Totally untestable. Now, we can test it, because physics allows us to calculate energy flows in the brain.

— Michio Kaku —

AZ QUOTES
History of Behavior Analysis

The simplest and most satisfactory view is that thought is simply behavior - verbal or nonverbal, covert or overt. It is not some mysterious process responsible for behavior but the very behavior itself in all the complexity of its controlling relations.

— B. F. Skinner —
History of Behavior Analysis

• BF Skinner’s *Radical* Behaviorism

• “... behavior, whether inside or outside the skin, may be usefully regarded as a phenomenon directly related to the circumstances in which it occurs, rather than as merely an expression or manifestation of an inner or mental life.” (Moore, 2008)
History of Behavior Analysis

• Simply put, radical behaviorists believe that behavior, including private behavior like thinking, is important to study, not because it teaches us about something somewhere else, but because all behavior is related to other events (i.e., lawful).
## History of Behavior Analysis

<table>
<thead>
<tr>
<th><strong>The conceptual analysis of behavior</strong></th>
<th><strong>Applied behavior analysis</strong> is the systematic application of behavioral technology and principles in the world outside the laboratory</th>
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<td>is the philosophical, theoretical examination of the subject matter and methods of behavior analysis</td>
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<tr>
<th><strong>The experimental analysis of behavior</strong></th>
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History of Behavior Analysis

The conceptual analysis of behavior is the philosophical context for research in psychology. Applied behavior analysis is the systematic application of implement behavior analytic services.

These domains represent the science of behavior analysis. Each domain influences the other. It is not a set of techniques or strategies, but a scientific discipline focused on understanding how behavior is related to other events.
Applied Behavior Analysis
The BCBA says that the FA of the SIB suggests that NCR w/FT60 would be better than DRA+EXT and FCT. Let's put it in the BSP & IEP.
Defining Applied Behavior Analysis

Applied Behavior Analysis (ABA) is the science in which tactics derived from the principles of behavior are applied systematically to improve socially significant behavior and experimentation is used to identify the variables responsible for behavior change.
Say it with me...there is NO such thing as NO antecedent.
Defining Applied Behavior Analysis

- Applied Behavior Analysis (ABA) is the **science** in which tactics derived from the principles of behavior are applied systematically to improve socially significant behavior and experimentation is used to identify the variables responsible for behavior change.

- Science - a branch of knowledge or study dealing with facts or truths systematically arranged and showing the operation of general laws.
  - Behavior develops and changes based on predictable "laws" just like physics or chemistry.
    - Physics – a body in motion tends to remain in motion.
    - Chemistry – conservation of mass in a chemical reaction.
    - Behavior – reinforcement increases the likelihood that a behavior will happen again.
Get with the program Microsoft Word. Reinforcer is a word.
Defining Applied Behavior Analysis

• Applied Behavior Analysis (ABA) is the science in which tactics derived from the principles of behavior are applied systematically to improve socially significant behavior and experimentation is used to identify the variables responsible for behavior change

• Tactics - the art or skill of employing available means to accomplish an end
  • There are many tactics in the ABA toolbox
    • Functional communication training
    • Discrete trial teaching
    • Naturalistic teaching
    • Prompting
    • Task analysis
    • Chaining
    • Fading
    • Token economy

• Derived from the experimental analysis of behavior
What you’re saying is that all behaviors must be observable and measurable. Interesting.
Defining Applied Behavior Analysis

• Applied Behavior Analysis (ABA) is the science in which tactics derived from the principles of behavior are applied systematically to improve socially significant behavior and experimentation is used to identify the variables responsible for behavior change

• Principle - a fundamental, primary, or general law or truth from which others are derived
  ✓ Tactics are based on principles of behavior

• Behavior – everything an organism does (including thinking)
Attention-seeking behavior is the leading cause of being ignored.
Defining Applied Behavior Analysis

- Applied Behavior Analysis (ABA) is the science in which tactics derived from the principles of behavior are applied systematically to improve socially significant behavior and experimentation is used to identify the variables responsible for behavior change.

- Systematically - having, showing, or involving a system, method or plan:
  - If you have an injury or illness, your Dr. systematically diagnoses and treats that injury or illness.
  - “Treating” behavior also happens systematically – deciding what needs to be learned, where to start the instruction, measuring whether or not it is working and changing the “treatment” accordingly.
Put my behavior on extinction. Humph!
Defining Applied Behavior Analysis

- Applied Behavior Analysis (ABA) is the science in which tactics derived from the principles of behavior are applied systematically to improve **socially significant behavior** and experimentation is used to identify the variables responsible for behavior change.

- **Socially significant behavior** – behavior that matters to society
  - Communication, social skills, academics, reading and adaptive living skills including gross and fine motor skills, toileting, dressing, eating, personal self-care, domestic skills, and work skills.
  - Might be different for each individual.

- What behaviors might contribute to well-being, competence, satisfaction.
"Behavior goes where reinforcement flows".
Defining Applied Behavior Analysis

- **Applied Behavior Analysis (ABA)** is the science in which tactics derived from the principles of behavior are applied systematically to improve socially significant behavior and **experimentation** is used to identify the **variables** responsible for behavior change.

- **Experimentation** - an act or operation for the purpose of discovering something unknown or of testing a principle
  - If I give you a break for completing this lesson are you more or less likely to complete the lesson than if I give you social praise?

- **Variables** – capable of being varied or changed
  - What can I give you to make you more likely to complete the lesson?
  - Is there a way I can change the lesson to make it more likely that you will complete the lesson?
Using data to make decisions.
What a novel idea.
7 Dimensions of Applied Behavior Analysis

1. **Applied**: Applied interventions deal with problems of demonstrated social importance.

2. **Behavioral**: Applied interventions deal with measurable behavior (or reports if they can be validated).

3. **Analytic**: Applied interventions require an objective demonstration that the procedures caused the effect.

4. **Technological**: Applied interventions are described well enough that they can be implemented by anyone with training and resources.

5. **Conceptual Systems**: Applied interventions arise from a specific and identifiable theoretical base rather than being a set of packages or tricks.

6. **Effective**: Applied interventions produce strong, socially important effects.

7. **Generality**: Applied interventions are designed from the outset to work in new environments and continue to work after treatment has ended.
So – in simple terms, ABA is...

• It is a science! The science of understanding why people do the things they do and using that knowledge to help them make noteworthy changes in their behavior

• It is the science (behavior) of learning...

Education is what survives when what has been learned has been forgotten.

B.F. Skinner
1904 - 1990
How can ABA be used?

- ASD
- ADHD
- Tic Disorders
- Schizophrenia
- Dementia/Alzheimer’s
- Anxiety & Phobias
- Depression
- Feeding/Eating Disorders
- Adult Psychotherapy
- Substance Abuse
- Relaxation
- Education
- Child Development
- Sports
- Safety

- Language Training
- Self-injury, Aggression, Stereotypy
- Gambling Addiction
- Parenting
- Sleep Problems
- Toileting/Incontinence
- Systems
- Staff Training
- Gerontology
- Foster Child System
- Animal Training
- Pain Management
- Adherence to Medical Treatments
- Brain Injury
The majority of the ASD evidence-based practices identified by The National Professional Development Center (NPDC) on Autism Spectrum Disorder, The National Autism Center and the Centers for Medicare and Medicaid Services (CMMS) are based on the principles of Applied Behavior Analysis.

- Antecedent-based Intervention
- Differential Reinforcement
- Discrete Trial
- Extinction
- Functional Behavior Assessment
- Functional Communication Training
- Modeling
- Naturalistic intervention
- Pivotal Response Training
- Prompting
- Reinforcement
- Self-management
- Task Analysis
- Time Delay
- PECS
• 35+ group studies demonstrate significant benefits
• Over 800 single subject studies demonstrate benefits of ABA to address specific behaviors
• National Standards Project found that 2/3 of Established Treatments come from behavioral literature
• Of the remaining 1/3, 75% represent treatments for which research support comes predominantly from the behavioral literature; developmental psychology also influenced these treatments.
Behavior Analysis and ASD
Identifying what is ABA


1. An objective assessment and analysis of the client’s condition by observing how the environment affects the client’s behavior, as evidenced through appropriate data collection

2. Importance given to understanding the context of the behavior and the behavior’s value to the individual, the family, and the community

3. Utilization of the principles and procedures of behavior analysis such that the client’s health, independence, and quality of life are improved

4. Consistent, ongoing, objective assessment and data analysis to inform clinical decision-making

(BACB, 2014)
Focused ABA

• Focused ABA refers to treatment provided directly to the client for a limited number of behavioral targets. It is not restricted by age, cognitive level, or co-occurring conditions.

(BACB, 2014)
Comprehensive ABA Treatment Terms

Comprehensive ABA

• Comprehensive ABA refers to treatment of the multiple affected developmental domains, such as cognitive, communicative, social, emotional, and adaptive functioning. Maladaptive behaviors, such as noncompliance, tantrums, and stereotypy are also typically the focus of treatment.

(BACB, 2014)
Prioritizing Behavioral Targets

✓ **Behavior that threatens the health or safety** of the client or others or that constitute a barrier to quality of life (for example, severe aggression, self-injury, property destruction, or noncompliance)

✓ **Absence of developmentally appropriate adaptive, social, or functional skills** that are fundamental to maintain health, social inclusion, and increased independence (for example, toileting, dressing, feeding, and compliance with medical procedures).

*(BACB, 2014)*
ABA delivery

LOCATION
- HOME
- SCHOOL & COMMUNITY
- CLINIC/OUTPATIENT
- RESIDENTIAL
- HOSPITAL/INPATIENT

TREATMENT MODEL
- FOCUSED
- COMPREHENSIVE

(BACB, 2014)
Behavior Analysis and ASD

Behavior Analysis isn't a "model" one can toss in a bag of tricks. It is an entire scientific field. #freeABA
“As more professionals enter the field of ABA and implement these procedures with individuals diagnosed with ASD, it is important for them to be faithful to the science-based, progressive approach, which has always been the hallmark of ABA. Clinicians should be able to make responsive decisions, as opposed to rigidly adhering to a set protocol or following a manual without understanding the basic and advanced principles behind those procedures”

(Leaf et. al 2016, p. 722).
Qualifications to Apply the Science of Behavior Analysis
Before I was a BCBA...
Qualifications for Behavior Analytic Providers

We all use medical knowledge to take care of ourselves and our loved ones.

But that doesn’t make us doctors. Sometimes we need individuals trained in medical science.
Qualifications for Behavior Analytic Providers

• Since 1998 – Board Certified Behavior Analysts are the “doctors” of Behavior Analysis

• “The Behavior Analyst Certification Board was established to meet professional credentialing needs identified by behavior analysts, governments and consumers of behavior analytic services.”
Essential Practice Elements of ABA

1. **Comprehensive assessment** that describes specific levels of behavior at baseline and informs subsequent establishment of treatment goals

2. An emphasis on understanding the current and future value (or **social importance**) of behavior(s) targeted for treatment

3. A **practical** focus on establishing small units of behavior which build towards larger, more significant changes in functioning related to improved health and levels of independence

4. Collection, quantification, and **analysis of direct observational data** on behavioral targets during treatment and follow-up to maximize and maintain progress toward treatment goals

(BACB, 2014)
Essential Practice Elements of ABA

5. Efforts to design, establish, and manage the social and learning environment(s) to **minimize problem behavior(s)** and **maximize rate of progress toward all goals**

6. An approach to the treatment of problem behavior that links the **function of (or the reason for)** the behavior to the programmed intervention strategies

7. **Use of a carefully constructed, individualized and detailed** behavior-analytic treatment plan that utilizes reinforcement and other behavioral principles and **excludes the use of methods or techniques that lack consensus about their effectiveness based on evidence in peer-reviewed publications.**
Essential Practice Elements of ABA

8. Use of treatment protocols that are implemented repeatedly, frequently, and consistently across environments until discharge criteria are met

9. An emphasis on ongoing and frequent direct assessment, analysis, and adjustments to the treatment plan (by the Behavior Analyst) based on client progress as determined by observations and objective data analysis

10. Direct support and training of family members and other involved professionals to promote optimal functioning and promote generalization and maintenance of behavioral improvements

11. A comprehensive infrastructure for supervision of all assessment and treatment by a Behavior Analyst

(BACB, 2014)
Qualifications for Behavior Analytic Providers

- Quality ABA services are complex and require highly trained practitioners to evaluate, assess and deliver services. MAD requires AP practitioners to be Board Certified Behavior Analyst® (BCBA®) or Board Certified Behavior Analyst-Doctoral® (BCBA-D®) by the Behavior Analyst Certification Board (BACB®).

Medical Assistance Division: NM Medicaid
Qualifications for Behavior Analytic Providers

(BACB, 2014)
Planning, directing, and monitoring effective ABA programs for individuals with autism requires specific competencies. **Individuals with autism, their families, and other consumers have the right to know whether persons who claim to be qualified to direct ABA programs actually have the necessary competencies.** All consumers also have the right to hold those individuals accountable for providing quality services (e.g., to ask them to show how they use objective data to plan, implement, and evaluate the effectiveness of the interventions they use)

From “**Consumer Guidelines for Identifying, Selecting, and Evaluating Behavior Analysts Working with Individuals with Autism Spectrum Disorders**”
Behavior Analytic Providers

Should be: Trained in multiple procedures that form a comprehensive package based individual needs. **Providers should have a wide repertoire of interventions** that they can perform and train with fidelity. For example:

- ✔ Script fading
- ✔ Video modeling
- ✔ Role-playing
- ✔ Task analysis
- ✔ Shaping
- ✔ Prompting
- ✔ Chaining
- ✔ Functional assessment
- ✔ Extinction
- ✔ Differential reinforcement
- ✔ Desensitization
- ✔ Preference assessments

Leaf et. al 2016
# Qualifications for Behavior Analytic Supervisors

## Checklist for Selecting a Qualified Professional to Supervise ABA Services for Individuals with ASD

Supervise direct interventions and oversee programs:

<table>
<thead>
<tr>
<th>Qualification</th>
<th>BCBA</th>
<th>BCBA-D</th>
<th>Licensed Psychologist (non-BCBA)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Education (minimum)</strong></td>
<td>• Masters</td>
<td>• Doctorate</td>
<td>• Doctorate</td>
</tr>
<tr>
<td><strong>Training</strong></td>
<td>• 1000 hours (25/week for 40 weeks)</td>
<td>• 1000 hours (25/week for 40 weeks)</td>
<td>• ABAI-accredited program</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• 1000 hours (25/week for 40 weeks)</td>
</tr>
<tr>
<td><strong>Experience with ABA (minimum)</strong></td>
<td>• 5 years</td>
<td>• 5 years</td>
<td>• 10 years</td>
</tr>
<tr>
<td></td>
<td>• Obtain resume</td>
<td>• Obtain resume</td>
<td>• Obtain resume</td>
</tr>
<tr>
<td><strong>Licensure/Certification</strong></td>
<td>• Certification</td>
<td>• Certification</td>
<td>• Certification</td>
</tr>
<tr>
<td></td>
<td>• State licensure if applicable</td>
<td>• State licensure if applicable</td>
<td>• State licensure if Applicable</td>
</tr>
<tr>
<td><strong>Other/Notes</strong></td>
<td>• Member of ABAI</td>
<td>• Member of ABAI</td>
<td>• Member of ABAI</td>
</tr>
<tr>
<td></td>
<td>• Member APBA</td>
<td>• Member APBA</td>
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• BACB certificants are required to attest to their compliance with the organization’s ethical and disciplinary rules (see below) on a biennial basis and obtain 20 (BCaBA) or 32 (BCBA, BCBA-D) hours* of continuing education every two years, 4 hours of which must relate to professional ethics.

• All certificants must regularly report any matter that might impact their ethical compliance. The BACB’s ethical requirements may be found at www.BACB.com.
NM Medicaid Behavior Analytic Services for ASD
ABA services are provided to a member as part of a three-stage comprehensive approach consisting of **evaluation, assessment, and treatment** which stipulates that ABA services be provided in coordination with other medically necessary services (e.g., Family Infant Toddler Program services, occupational therapy, speech language therapy, medication management, etc.).
NM MAD ABA services under age 21

(Stage 1): a referral to an AEP to confirm the presence of, or risk for ASD, and/or integrated service planning

(Stage 2): a Behavior Analytic Assessment is conducted and the Behavior Analytic Assessment; and the ABA Treatment Plan is developed as appropriate for the selected service model.

(Stage 3). ABA services are then rendered by an approved AP in accordance with the member’s ABA Treatment Plan.
NM MAD ABA services under age 21

**At risk for Developing ASD:** 12 months to 3 yrs. Based on specific diagnostic criteria (including siblings with ASD).

**Focused ABA:** refers to treatment provided directly to the member for a limited number of behavioral targets. It is not restricted by age, cognitive level, or co-occurring conditions. 10-20 hrs/wk.

**Comprehensive ABA:** refers to treatment where there are multiple targets across most or all developmental domains that are affected by the member’s ASD. Targets are drawn from multiple domains related to cognitive, communicative, social, emotional, and adaptive functioning. Targets also include reducing aggression, self-injury, disruption, and stereotypy. 20-40 hrs./wk.
NM ABA

**Stage 1 – Diagnosis and Service Plan Development**
- ASD specific screening
- Diagnostic Evaluation
  - Evaluation Report
  - Individualized Service Plan (ISP)

**Stage 2 – Behavior Analytic Assessment and Treatment Plan Development**
- Determine strengths and weaknesses

**Stage 3 – ABA Service Delivery**
- Supervision of RBTs
  - 1-2 hour per 10
- Management (paperwork)
  - 1-2 hour per 10
- Specialty Care
  - Sleep, aggression, self-injury, feeding, pica, elopement
Is it hard to find ABA services in NM?

• We are growing (slowly)... There are currently approximately 40 BCBAs in NM. This compares to 400 in Colorado, 200 in Arizona, and 1111 in TX.

• Possible future legislation to expand the age of those who are eligible for ABA services and to open the services to be funded for other disabilities.
The Center for Development and Disability is working to help increase capacity of behavior analytic providers in the state.

- RBT Trainings
- Developing partnerships with behavior analytic providers to support growth
- Supervising individuals obtaining their BCBA and RBT credential

New providers are moving into the area

- Many new providers are coming to NM!
- Contact the CDD for more information
- Contact BCBAs directly from the BACB registry
Autism Family and Provider Resource Team
A state-wide information phone line for families, individuals with Autism Spectrum Disorder, and providers seeking autism-specific resources.

A team of resource specialists can assist individuals with ASD, families and providers in finding autism-specific resources as well as offer guidance in “navigating the system.”

(505) 272-1852 or toll-free 1-800-270-1861
http://www.cdd.unm.edu/autism/programs/index.html

A University Center of Excellence in Developmental Disabilities Education, Research and Services (UCEDD)
Want to know more about ABA?

• Contact professional organizations:
  ✓ Behavior Analyst Certification Board
    • http://bacb.com
  ✓ New Mexico Association for Behavior Analysis
    • www.nmaba.org
  ✓ 4-Corners Association for Behavior Analysis
    • www.4caba.org
  ✓ Association for Behavior Analysis International
    • www.abainternational.org
  ✓ Association for Professional Behavior Analysts
    • www.apbahome.net

• Interested in studying ABA?
  UNM offers a Graduate Certificate in ABA
  https://coe.unm.edu/departments-programs/es/special-education-program/aba-certificate/index.html
ABA

BEHAVIORISM GONE WRONG...

GIVE ME MY REWARD AND NO ONE GETS HURT