Applied Behavior Analysis: What You Need to Know Today!
Patrick R. Blevins MA, BCBA
University of New Mexico Medical Group
prblevins@salud.unm.edu

ABA!

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

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.

History of Behavior Analysis

“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

History of Behavior Analysis

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.

— Elsie Janis Larras
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)

History of Behavior Analysis
History of Behavior Analysis

\begin{itemize}
  \item "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."
  \item "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."
\end{itemize}

(Cooper, Heron & Heward pg. 7, 2007)

History of Behavior Analysis

\begin{itemize}
  \item Six attitudes of science
  \begin{itemize}
    \item Determinism
    \item Empiricism
    \item Experimentation
    \item Replication
    \item Parsimony
    \item Philosophic doubt
  \end{itemize}
\end{itemize}
History of Behavior Analysis

• 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
  • Parsimony – all simple, logical explanations be ruled out before more complex or abstract explanations are considered
  • Philosophic doubt

"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

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 —
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.” (Moor e, 2008)

• 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

The conceptual analysis of behavior is the philosophical, theoretical examination of the subject matter and methods of behavior analysis.

Applied behavior analysis is the systematic application of behavioral technology and principles in the world outside the laboratory.

The experimental analysis of behavior is the systematic context for research in psychology.

Service delivery is provided by an individual trained to 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
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.
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.

- 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.
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

- 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.

- 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
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?
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...

---

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
- Toilting/Incontinence
- Systems
- Staff Training
- Gerontology
- Foster Child System
- Animal Training
- Pain Management
- Adherence to Medical Treatments
- Brain Injury
Evidence-based Practices

- 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

Behavior Analysis and ASD

- 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

**BACB Practice Guidelines: Applied Behavior Analysis Treatment of Autism Spectrum Disorder**

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

---

# Focused ABA Treatment Terms

**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.

---

# 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.
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).

ABA delivery

Behavior Analysis and ASD
Best practice of ABA?

“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...

![Image]
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.
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.

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 Analysts (BCBA®) or Board Certified Behavior Analyst-Doctoral (BCBA-D®) by the Behavior Analyst Certification Board (BACB®).

Medical Assistance Division: NM Medicaid
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)

Behavior Analytic Providers

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:
- BCBA
- BCBA-D
- Licensed Psychologist (non-BCBA)

Education (minimum):
- Bachelor
- Doctorate

Training:
- 1000 hours (25/week for 40 weeks)
- 1200 hours (25/week for 60 weeks)
- ABAI-accredited program

Experience with ABA (minimum):
- 5 years
- 10 years

Licensure/Certification:
- Certification
- State licensure if applicable

Other/Notes:
- Member of ABAI
- Member APBA


Ethical Code for Behavior Analytic Providers

- 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

NM MAD ABA services under age 21

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. 10-20hrs/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. 20-40hrs/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

NM ABA

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 BCBA directly from the BACB registry

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/ev/special-education-program/aba-certificate/index.html
ABA

BEHAVIORISM GONE WRONG...

GIVE ME MY REWARD AND NO ONE GETS HURT