Data Collection

Tricia Moss, PhD, BCBA-D

ABA Psychological Services, P.C.

Triciamoss4@gmail.com

(516) 294-5000

Applied Behavior Analysis (ABA) uses the principles of learning to teach new skills, increase appropriate behavior, and/or decrease challenging behavior. One of the major components of ABA is using data to determine whether treatment procedures are effective in changing the behavior of an individual. All decisions about whether treatment procedures are effective in teaching new skills or decreasing challenging behavior are made based on the data that are collected. If the procedures are not effective and progress is not being made, changes will be made to the treatment procedures.

Parental involvement is extremely important for the generalization of skills from ABA therapy sessions to more natural settings, and for the success of the child receiving ABA. Several studies have found that children are more successful when parents are consistently involved in the treatment (Ozonoff & Cathcart, 1998). ABA therapy sessions only occur for a small portion of the day, and parents spend the most amount of time with their children. Therefore, if parents work with their children on program goals outside of ABA therapy sessions, their child is more likely to make quicker progress.   As part of the treatment team, parents may be asked to collect data on their child's behavior.

1. What to know before you start
    • Many times, children may behave differently under different circumstances. Sometimes, behaviors that are seen at school or with a provider are not seen at home or with the parents. Alternatively, behaviors that are seen with the parents may not be seen at school or with the providers.
    • There are several reasons to collect data. Parents may be asked to collect data on the occurrence of challenging behavior to help determine why and under what circumstances behavior occurs. Also, parents may be asked to collect data to determine whether a treatment procedure is working to decrease challenging behavior (e.g. tantrums, hitting, stimming, etc.) or increase an appropriate behavior (e.g. requesting, toileting, following directions, etc.).
    • Decisions about whether procedures are working are made based on the data.
    • Because there are many ways to collect data, it is important to work with the BCBA/LBA to find the best way to collect these data.

2. Questions for the BCBA
    • Why do we collect data on behavior?

- o A BCBA/LBA may ask parents to take data on behavior when 1) the BCBA/LBA is not able to observe the behavior themselves, 2) the child responds differently in their presence, 3) the child is exhibiting challenging behavior and data are collected to determine why, or 4) procedures are in place to decrease challenging behavior or increase appropriate behavior and data are collected to determine if these procedures are effective.
- What are the easiest data sheets to use?
  - o Data should be collected on an individual basis based on what needs to be measured. There are some basic datasheets that a parent may be asked to use, but data collection should be specific to each individual. Therefore, parents should work with the BCBA/LBA to develop the best way to collect data and what datasheets to use.   Some generic datasheets are included at the bottom of this paper.
  - o Parents should work with the BCBA/LBA and be honest. If data collection is going to be too difficult for the parent, he/she should speak with the BCBA/LBA to identify a data collection system that will work for him/her and his/her family.
    Some examples of how to simplify data collection include:
    1) only collecting data during specific times of the day (e.g. a 1 hour block)
    2) take a picture of a situation that occurs and write it down later
    3) set up a data sheet in a "notes" application on the phone
    4) use a data collection app
    5) only collect data on certain days
    6) decrease the number of behaviors being measured (e.g. collect data on 1-2 behaviors instead of 10)
    7) if data are being collected on the number of occurrences (i.e. frequency) use a golf counter, transfer coins from one pocket to another, move rubber bands from one arm to another, etc.
    8) Place data sheets in locations that will prompt you to collect the data (e.g. toileting
    data sheets in the bathroom)

3. Data collection- There are several different ways to collect data. Three of the most common types of data collection methods are described below.
   - **_Frequency_** – Frequency refers to the number of times in a specific time period that behavior occurred. For example, between 3:00-6:00pm, the child hit another person 6 times. Frequency data may be used to take data of many behaviors including: throwing things, hitting others, requesting things, yelling, pointing to a preferred item, etc.
   - **_Duration_** – Duration refers to how long the behavior occurs for. This is typically used to measure behavior that occurs for several minutes at a time. For example, a tantrum that lasts 20 minutes. Duration data may be used to collect data on several behaviors including: tantrums, stimming, off-task behavior, completing homework, etc.
   - **_ABC data_** – ABC data are used to identify why challenging behavior is occurring.   Research has shown that knowing why challenging behavior

occurs (i.e. the function of behavior) results in more effective treatment than if the function is not identified.

- A= Antecedent – What happened immediately before the behavior. This can be an instruction, introduction of a stimulus (e.g. work materials, food, etc.), told "no", the removal of an item, given an item, parent talking to someone else, among other possible triggers.
- B = Behavior – The behavior that is being measured (e.g. tantrums, hitting, yelling, etc.)
- C = Consequence – What happened immediately after the behavior occurred. Some examples of consequences are: ignored, spoke to the child, removed item, walked away, given an item.
- Setting- This can include the location of the child, the activities that are present, the noises or lights in the room, or anything else that may affect the child.

Typically, the BCBA/LBA is looking for patterns of behavior related to the behavior that is occurring (e.g. aggression occurs when asked to stop a preferred activity, or when no attention is given, etc.). There are typically columns for time, setting, antecedent, behavior, and consequence. More information is better than less when filling these forms out. Sometimes there are things that you may think lead to behavior, but there is not a specific column for these items (e.g. lighting, hunger, sleep, noises, other people, etc.). If you are not sure where to put something on the sheet, just write it down somewhere. When you meet with the BCBA/LBA, they can show you where to write this information. Data are usually collected until there is a clear pattern of behavior, but in most cases, data will probably only need to be collected for several days to a week. If the behavior occurs with someone other than the person collecting data, the person collecting data should still record the data.

- If unsure about data collection or the rationale behind taking the data a certain way, speak with BCBA/LBA. There are several ways to collect data and it is important to work with the BCBA/LBA to develop a data sheet or method for collecting data that works best for the parent and family.

4. Materials you may want to have. Are there computer programs/apps to make this easier?
   a. Data sheets should be provided/developed by the BCBA/LBA.
   b. Some data collection apps
      i. Behavior Tracker Pro – used to take data on a variety of skills.
      ii. MotivAider – timer app
      iii. Symtrend - has different apps for different skills (e.g. toileting, sleeping, challenging behavior, etc.)
      iv. Tally Counter, Tally It! – can be used to collect frequency data
      v. Autism Tracker – track behaviors and situations surrounding behavior (e.g. mood, food, etc.)
      vi. Tantrum Tracker - tracks tantrums and outbursts
      vii. CountC – can collect frequency data on a variety of behaviors
      viii. Autism Apps – description and ratings for different apps for autism

5. What to expect
   - You will have questions about data collection and will probably run into obstacles while collecting data. For example, you may receive a phone call when you are supposed to be collecting data, a sibling may want your attention, etc.
   - You will probably need to make changes to the way you are collecting data and the data sheet at some point. Do not get frustrated if it does not work out the way you expect right away.   Sometimes figuring out the best way to collect the data takes a little bit of time.
   - Make sure you work with your BCBA/LBA to come up with the best way for you to collect the data that you need.

6. Books and resources

Free Parent Training Resources

https://autismcertificationcenter.org/families

http://media.mindinstitute.org/education/ADEPT2/Lesson_10/Lesson_10.htm

http://ucdmc.ucdavis.edu/mindinstitute/centers/cedd/cedd_adept.html

Parent Guide to ABA

https://www.autismspeaks.org/docs/sciencedocs/atn/atn_air-p_applied_behavior_analysis.pdf

Description of ABA

https://www.autismspeaks.org/docs/sciencedocs/atn/atn_air-p_applied_behavior_analysis.pdf

Importance of Parent Training

https://www.autismspeaks.org/science/science-news/training-helps-parents-reduce-challenging-autism-behaviors

https://www.autismspeaks.org/science/science-news/parent-training-program-shows-clear-gains-toddlers-autism

Challenging Behavior Manual Including Data Collection Forms

https://www.autismspeaks.org/sites/default/files/challenging_behaviors_caregiver_manual.pdf

Challenging Behavior, Mealtime, and Toileting

https://www.autismspeaks.org/family-services/grants/targeting-big-three-challenging-behaviors-mealtime-behaviors-and-toileting

Data collection

http://www.escambia.k12.fl.us/pbis/data/Data%20Collection%20Guide_10-11-10.pdf

Frequency Datasheets

http://www.specialconnections.ku.edu/~specconn/page/assessment/ddm/pdf/Event_recording_examplerevised.pdf

http://www.specialconnections.ku.edu/~specconn/page/assessment/ddm/pdf/event_recording_blankrevised.pdf

Video for collecting frequency data

https://autismcertificationcenter.org/video-gallery/1_xwvz784u

Duration Datasheets

http://www.specialconnections.ku.edu/~specconn/page/assessment/ddm/pdf/Behavior_Duration_example_revised.pdf

http://www.specialconnections.ku.edu/~specconn/page/assessment/ddm/pdf/Behavior_Duration_blankrevised.pdf

ABC Datasheets

http://www.specialconnections.ku.edu/~specconn/page/behavior/fba/pdf/completedabcchart.pdf

http://www.specialconnections.ku.edu/~specconn/page/behavior/fba/pdf/blankabcchart.pdf

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Written by Tricia Moss, PhD, BCBA-D