

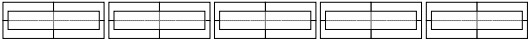
# SPHSC 500 Autumn 2009

Clinical Methodology for  
Documenting Change  
Lesley B. Olswang  
"Monitoring Progress"

## Monitor Progress – Concepts/Decisions


- Progress as measured at regular intervals
- Amount and nature of change
- Whether treatment needs to be modified
- Benefits of treatment
- Ongoing needs of family/client
- Final disposition and recommendations (re: these or other targets)

Order of presentation – first column, then second column



## Evidence-Based Practice

- **Internal Evidence**
  - To accompany external evidence and client preference
- Clinician collected data to examine progress of client and thus benefits of treatment



## Monitor Progress – Tools for Data

- Standardized and nonstandardized tests/procedures
- Behavioral Observation
  - Naturalistic
  - Structured - Probe measures
- Interview

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## Readings

- SPHSC Glossary
- Olswang & Bain (1994, 2001)
- Revisit Bogdan & Biklin (1992)

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## Monitoring Progress Concepts

- Progress as measured at regular intervals
- Amount and nature of change
- Whether treatment needs to be modified

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## Data Collection for Measuring Progress

- What to measure (and why)
- How to measure (tools)
- When to measure

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## What to Measure (SPHSC Glossary)

- Behaviors
  - Target (Short Term – Behavioral Objective and During Treatment)
  - Generalization
  - Control
- Measures
  - Treatment Data
  - Probe Data
- Kinds of Data
  - Quantitative (analytic)
  - Qualitative (systemic)



## What to Measure: Behaviors

- Target (Behavioral Objective)
  - Behavior specified by behavioral objective
  - Behaviors specified in sequential teaching program
- Generalization
- Control

REMEMBER – includes behaviors client produces but also client and other consumers opinion, attitude, etc.



## What to Measure: Behaviors

- Target - Objective
- Recall this will specify:
  - Who to treat – and measure
  - What to treat and measure
    - What behaviors are you teaching? Body Structures and Functions? Activities and Participation?
  - How to measure – Conditions of measurement
    - Manner
    - Setting
    - People
    - Intrusiveness



## What to Measure: Behaviors

- Target Behavior(s)

Why measure?

Ultimate change

Instrumental change



## What to Measure: Behaviors

- Behaviors delineated in sequential teaching program per step (**ABC**)
- Each step will delineate how it is measured (**ABC**)



## What to Measure: Behaviors

- Behaviors produced during treatment

Why measure?

Intermediate change

Instrumental change



## What to Measure: Behaviors

- Generalization
  - What behaviors do you expect to change via generalization of the target?
  - Stimulus Generalization
  - Response Generalization
  - Remember-You can have a target that is generalization
  - Client beliefs, feelings, other consumer beliefs, feelings
  - REVISIT WHO Model



## What to Measure: Behaviors

- Generalization measures

Why measure?

Ultimate change



## What to Measure: Behaviors

- Control
  - What behaviors should be developing/changing due to maturation, or other natural reasons, but NOT due to your treatment?
  - Behaviors not in the same response class as target
  - Behaviors that are similar developmentally, categorically





## What to Measure: Behaviors

- Control Behaviors

Why measure?

Account for other causes of  
change



## What to Measure

- Importance of multiple  
measures

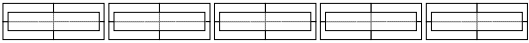
- Target
- Generalization
- Control

Measuring multiple consumers  
as part of the deciding who  
and what to measure



## What to Measure: Behaviors

- Exercise (your clients):
  - Name the target behavior
  - Name a generalization behavior
  - Name a control behavior



## Tools – How to Measure

- Standardized Tests
- Behavioral Observation
  - Naturalistic - Structured
  - Treatment Measures/Data
  - Probes
- Interview
- Quantitative and Qualitative



## How to Measure: Standardized Tests

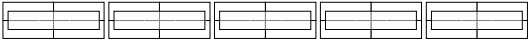
- Pre- and post-test data
- Large change – more about ultimate change
  - Recall ultimate change – What is it?

(Bain & Dollaghan, 1991)



## How to Measure: Behavioral Observation

- Can be anywhere on the continuum from naturalistic to contrived
  - Treatment Data
  - Probe Data
- Can be quantitative or qualitative



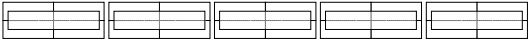
## Behavioral Observation

- **Treatment Data**
  - Measure of performance during treatment
  - Measure of Intermediate change – responding to treatment
  - Structured – by definition since these data are collected during treatment
  - Quantitative and qualitative – describe each



## Behavioral Observation

- **Probe Data**
  - Target, Generalization, Control Behaviors typically measured by probes
  - Data you collect outside of the treatment paradigm
  - Sometimes viewed as “true learning” as these measures reveal learning outside of direct teaching
  - Instrumental and Ultimate change
  - Quantitative typically (but can be qualitative)



## Quantitative Measurement Techniques: Reminder

1. Behavioral: recording observable events
  - Event recording
  - Duration recording
  - Interval recording

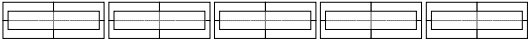
(Note: includes physiological measures e.g. EEG)
2. Subjective: soliciting opinions
  - Self-monitoring
  - Assessment of others

See Hand from Sulzer-Azaroff & Mayer, 1977  
See also Olswang & Bain, 1994, Appendices



## Qualitative

- How would qualitative allow you to measure progress:
  - Intermediate progress
  - Ultimate progress
    - Social comparison
    - Subjective evaluation

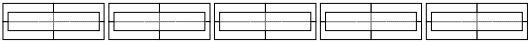


## Example #1: Quantitative or Qualitative?

*Have you felt sad or depressed at all lately, or have you generally been in good spirits?*

- (Subject 1) "Well, I've been in pretty rough shape lately, to tell you the truth. I mean, I haven't felt suicidal or anything like that, but I just can't seem to shake the blues. I just don't see anything to feel hopeful about in my future. I haven't really had anybody to talk to about my problems since my husband died last year."
- (Subject 2) "I'm not at all depressed. I feel great! I love my new job. And I've lost 20 pounds and feel much healthier than I have in years. I can't remember any period of my life when I've been happier."

Source: Polit, Denise. *Data Analysis and Statistics for Nursing Research*  
From: <http://www.cmh.edu/stats/definitions/qual.htm>



## Example #2: Quantitative or Qualitative?

*Thinking about the past week, how depressed would you say you have been on a scale from 0 to 10, where 0 means "not at all" and 10 means "the most possible?"*

**Data:**

- (Subject 1) 9
- (Subject 2) 0

Source: Polit, Denise. *Data Analysis and Statistics for Nursing Research*  
From: <http://www.cmh.edu/stats/definitions/qual.htm>



## How to Measure: Interview

- Measure of ultimate change
  - Subjective Evaluation



## Validity and Reliability

### Validity:

“...the truthfulness of the data...do the data accurately measure the phenomenon of interest.” This requires:

- Adequate amounts of data
- Adequate variety of data
- Adequate evidence to demonstrate plausibility.

Olswang & Bain, 1994, p. 57



## Validity and Reliability

Reliability :

“...the trustworthiness of the data” as a reflection of what is true for the client rather than what is in the clinician’s mind.

- Quantitative data: independent observers sample the same data and results are compared.
- Qualitative data: different sources of data result in the same conclusions -- CREDIBILITY

Olswang & Bain, 1994, p. 57



## When to Measure

How often do you need to take measurements to monitor change?

Two primary approaches

- Pre/Post
- Time Series – Ongoing – frequent, periodic, systematic measurement -- Importantly, includes multiple measures!!!



## When to Measure

Tools associated with each

### • Pre/Post

- Standardized
- Nonstandardized
- Interview
- Behavioral Observation

### • Time Series

- Behavioral Observation

## When to Measure Pre/Post

What pre/post  
can tell you

- Change over time
- Importance of change
  - Ultimate change
  - Standardized – Normative change

What pre/post  
can't tell you

- Change that is real vs. random
- Change due to treatment vs. maturation



## When to Measure Time Series/Ongoing

What time series can tell you

- Change over time
- Importance of change
- Impact of change
- Change that is real vs. random
- Change due to treatment vs. maturation
  - Instrumental change

What time series can't tell you

- Importance of change
  - Standardized/ Normative change



## Some reminders

- Treatment objective = behavioral objective – typically behavioral observation – structured/probe
  - Clear definition of behavior
  - Clear definition of how behavior will be elicited/sampled (conditions of measurement for behavioral observation)
  - Criterion for measuring success
- Measures of generalization and control behaviors
  - Typically behavioral observation – structured/probe
  - Contain all of the above except criterion.
- Importance of Multiple Measures



## Some Reminders

- Tools for data collection
  - Standardized measures
    - Quantitative primarily
  - Behavioral observation
    - Naturalistic to structured/contrived
    - Quantitative primarily
  - Interview
    - Qualitative primarily



## Some Reminders

- Ultimate Change
  - Target, Generalization
  - Standardized tests, Behavioral Observation, Interview
  - Pre/post and Time Series
- Instrumental Change
  - Target
  - Behavioral Observation
  - Time Series
- Intermediate Change
  - Target – during treatment
  - Behavioral Observation (maybe interview)
  - Time Series

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## Example Data

- Is auxiliary

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## Monitoring Progress – Benefits of Treatment

- How to examine benefits using data
- Consider change in regards to your treatment target objective, generalization behaviors, control behaviors
- Benefits: Efficacy Framework – 3 “Es”
  - Effectiveness
  - Effects
  - Efficiency

This section – provide an overview of concepts

## Is Treatment Effective?

### Process (short term):

- Intermediate change
  - session to session
- Instrumental change
  - short term change prompting long term/ultimate change

### Product (long term goal):

- Ultimate change
  - Social comparison
    - normal comparison
    - relevant peer comparison
  - subjective evaluation (consumer perspective)

## Is Treatment Effective?

Examples of specific questions:

### Process:

- Intermediate change
  - Is performance during a session showing change?
  - Is a session providing enough opportunities for practice?
- Instrumental change
  - Does treatment of final /s/ in words to 80% correct trigger correct production in connected speech?
  - Can treatment on this target be terminated because change will continue on it's own.

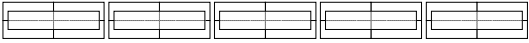
Product:

- Ultimate change
  - Is child performing in the “normal” range for vocabulary comprehension?
  - Is child performing like other children with ASD in his classroom in initiations with peers?
  - Is the parent satisfied with the child’s change and current performance?

**What are effects of treatment?**

Breadth and Depth of Change

- WHO—Impairment, activities & participation, environmental factors
- Stimulus Generalization
- Response Generalization
- Ultimate Change (overlaps with WHO activities and participation and generalization)
  - Social comparison
  - Subjective evaluation (consumer perspective)



## What are the effects of treatment?

Examples of specific questions:

- How does client change in relationship to treatment? (What behaviors change?)
  - Does treatment of requests for information in the therapy room generalize to the classroom?
- What is the breadth and depth of change across behaviors?
  - Does treating auxiliary "is" change copula "is"?
- Is the client (or significant others, or significant institutions) satisfied with change?
  - Does the child's increased initiations impact the family's interactions during dinner?



## Is treatment efficient?

- Value of treatment components
- Comparison of one treatment to another
- Termination of treatment/instrumental change



## Is Treatment Efficient?

Examples of specific questions:

- Are all the parts of treatment necessary?
  - Does the treatment of the target phoneme need to start at the isolation level?
  - Does treatment need to include nonsense syllables?
- Could another treatment be more effective/efficient?
  - Is treatment in a naturalistic setting more efficient than drill in teaching requests for information?
- Could treatment of the target be terminated?
  - Can treatment of the target phoneme be withdrawn after 75% correct productions in words?



## Efficacy Questions

- Effectiveness – Treatment and Probe Measures
  - Effects – Probe Measures
  - Efficiency – Treatment and Probe Measures
- (Handout)



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## Examples (who, what, how to measure)

- Treatment vs. Probe (Target and Control) Data
- Assignment #2 Part 3
- Kyle
- Supported Communication