Outcome Measurement Tools

Outcome is the term used to quantitatively describe the end result of a particular intervention including changes that occurred to the health of a person, group, or community.

Factors that influence outcome include:
- primary diagnosis
- co-morbidities
- medical stability
- prior physical status
- age
- gender
- beliefs
- attitudes

Measuring outcomes data is imperative to continually improve intervention strategies.

- It is a key component to reimbursement
- Provides a mechanism to maintain standards and consistency
- Provides a comprehensive, yet easy to use, systematic approach to assessing pain, function, disability, balance, mobility, development, etc.
Types of Instruments

- **Performance-Based Assesments:**
  - Administered by a therapist who observes the patient during the performance of an activity
  - Examples: Berg, Tinetti, Timed Up & Go

- **Self-Assessments:**
  - The patient is asked directly by the therapist or through the use of a self-administered assessment instrument
  - Examples: DASH, FABQ, LEFS

Performance-Based Assessment

- This is used when the therapist wants to see what a patient can do under a specific set of circumstances
- These tests can contribute to an understanding of a person’s function
- They most often do not measure the task as it might be accomplished in the “real” world

Instrument Parameters

- **Descriptive Parameters:**
  - Descriptive terms should be well-defined and unambiguous
  - Meanings of the descriptive terms should be clear
  - Examples: independent, min A, "difficulty"
Instrument Parameters

**Quantitative Parameters:**
- Timed assessment
- Examples of activities that may be timed: walking a set distance, signing one's name, donning an article of clothing, crossing the street during the time of a "walk" sign
- Quicker isn't always better

Response Formats

**Nominal Measures:**
- Simplest format
- Checklist of functional tasks & the patient is scored as able to do/not able to do, indep/dependent, complete/incomplete, etc

**Ordinal Measures:**
- Use of descriptive scales that describe a range of performance
- No difficulty, some difficulty, or unable to do
- Always, sometimes, rarely, never

Summary Measures

- Aka additive measures
- Awards points for part or full performance and you get a sum as a proportion of possible points
- Example: Berg Balance Scale: 50/56
Assessing the Quality of Instruments

- The measuring tool must be both valid and reliable.
- If the reliability and validity have not been established, little faith can be put in the results obtained or in the conclusions drawn from the results.
- The staff administering the tool must be familiar and qualified to do so in order to obtain meaningful and reliable results.

Reliability

- A reliable instrument measures a phenomenon dependably, time after time, accurately, predictably, and without variation.
- Intrarater Reliability:
  - Assessments performed by the same therapist of the same performance should be highly correlated.
- Interrater Reliability:
  - Agreement among multiple testers of the same event.

Validity

- Questions regarding an instrument’s validity attempt to determine:
  1. does the instrument measure what it is intended to?
  2. what are the appropriate applications of the instrument?
  3. how should the data be interpreted?
Validity continued

- **Concurrent Validity:**
  - New assessment tools can be compared to existing ones
  - The degree to which they agree helps to establish concurrent validity

- **Predictive Validity:**
  - Indicated the likelihood of a subsequent phenomenon or event on the basis of a prior phenomenon

The instrument should be sufficiently sensitive to reflect meaningful changes in patient status
The instrument should be concise enough to be useful in the clinic
Retesting should occur at regular intervals to document progress and at discharge.

**Examples**

- **Balance**
  - Berg Balance Scale
  - Functional Reach Test
  - "Get Up & Go" Test
  - Romberg Test
  - Tinetti Performance Oriented Mobility Assessment
Examples

- **Cognitive Assessment**
  - Mini Mental State Examination
  - Short Portable Mental Status Questionnaire

- **Endurance**
  - Borg’s Rating of Perceived Exertion Scale
  - Dyspnea Levels
  - Six-Minute Walk Test

Examples

- **Motor Recovery**
  - Fugl-Meyer Assessment
  - Rivermead Motor Assessment

- **Pain**
  - McGill Pain Questionnaire
  - Numeric Rating Scale
  - Visual Analogue Scale

- **Self-Care & ADL**
  - Barthel Index
  - Functional Independence Measure (FIM)

Examples

- **Outpatients**
  - DASH
  - FABQ
  - Oswestry
  - Berg
  - Tinetti
  - LEFS

- **SNF / Rehab**
  - FIM
  - Fugl Meyer
  - Barthel
  - Berg
  - Tinetti
Review of Today's Lecture

Questions??