



# Evaluating Physical Activity Programs

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# What is Physical Activity?

- Physical activity is the movement of large muscle groups through space.
- Exercise is the planned movement of large muscle groups through space in order to achieve one or more elements of fitness.
- Fitness can be aerobic, strength, or flexibility. ALL are important aspects of health as it is derived from physical activity.

# Components of Physical Activity

- The FITT Principle: Frequency, Intensity, Time (Duration), and Type
- National Recommendations (2+ years old):
  - Vigorous Intensity: at least 20 – 60 minutes, 3 days per week [typical exercise = aerobics]
  - Moderate Intensity: at least 30 minutes, most days of the week (5 days) [typical exercise = BRISK walking]
- Sport vs. Lifestyle Physical Activities



# Program Evaluation



# Program Evaluation

- Outcome Evaluation
  - “dependent measures”
  - main focus of experiments and interventions
- Formative Evaluation
  - pilot work
  - may involve qualitative methods
- Summative Evaluation
  - bringing the pieces together
  - making statements about the whole process
- Process Evaluation
  - during the intervention
  - assess how things are implemented
- Impact Evaluation
  - effects on systems and communities
  - often confused with Outcome



# Missions and Goals

- A mission statement is a general statement that expresses the overarching goals of an organization or project – has long-term vision and purpose – often reflects an organizations philosophy
- Goal is a quantified statement of a desired future state or condition
  - Also general, however, is more specific to aspects of the project that broadly relate to the mission statement
  - Does not have a timeline and is achievable but purposefully vague (however, goals are often done by year of the project)
  - Usually long-term although not always
  - Should have 3 – 5 but NOT more per year of the project and overall

# Writing Goals and Objectives

- “Nothing ever comes out as planned”
- “Everyone has a scheme that will NOT work”
- Mission statements do not usually change but goals and objectives WILL change and MUST be periodically evaluated
- Never have compound sentences or more than one sentence for a goal or objective
- MUST be directed by a professional who knows what they are doing!



# The Almighty Objective

- By FAR the hardest thing to do in planning and evaluation
- MUST be very specific, contain a short-term timeline, be measurable, each must address a unique activity related to achieving its goal
- Should limit to 3 objectives per goal
- Each objective must be accompanied with a description of specific activities, measures used, and who will be doing the work.
- Use ACTION verbs



# SMART Objectives

- **Specific** - clear about what, where, when, how the situation will be changed
- **Measurable**: quantify targets & benefits
- **Achievable**: able to reach objective given situation
- **Related**: to project goal – accomplishment of objective should affect the higher level goal
- **Time bound**: state the time period for accomplishment



# Outcome Measures of Physical Activity

<http://www.sdprc.org/lhn-measures.php>



# Questionnaire Development

- Use a large pool of items (3 – 5 times # needed)
- Test in a variety of settings and participants
- Check for conciseness, reading level, hidden interpretations, double barreled, implied meanings, matching options
- Moderate number of options
- Be careful with format of both questions and answers across cultures (knowledge questions; multiple choice; Likert scales)

# Question Formation - Pitfalls

- Reading Level
  - The energy expended from a weight-bearing exercise is double that expended when performing a non-weight bearing exercise. TRUE OR FALSE
- Double-Barreled
  - How often do you watch television on weekdays and weekend days?
- Hidden Assumptions
  - How often do you exercise after work?
- Appropriate Answer Options
  - TRUE OR FALSE for the previous question

# Questionnaire Development

## ● **Hard and Fast Rules**

- Do not use more than one sentence for questions and answers – write all questionnaires at 6 – 8<sup>th</sup> grade reading level.
- Offer all possible answers (I don't know; does not apply).
- Always check the data! Cannot demonstrate invalid instrument if do not have data!
- Always have instructions and a sample question for how to complete questionnaire.
- Group questions on similar topics together, separated by section headings and an introduction.
- Never separate a question with a page break.
- Use 14 pt. font for work with older adults.

## ● **Hard and Fast Rules ‘cont:**

- Always space questions out with a space inbetween each question and answer set.
- In Likert scales, always have the same amount of space between choices.
- Be CAREFUL with branching questions (skip patterns) – much better for interview format.
- Some cultures do not understand “double negative” phrases such as: “I am *not* not washing my hair tonight!”
- Provide operational definitions for all target behaviors – such as moderate physical activity, serving sizes of foods, etc. – and specify time frame. This is often called “Cognitive Framing”.
- Do not use colloquial expressions except if culturally-bound for target audience.
- Do not use “loaded” or “leading” language.

# Behavioral Observation



- Behavioral checklist
- Keep it SIMPLE! Remove the brain!
- Frequency of data recording depends upon:
  - purpose of the study
  - difficulty in collection
  - reliability of the measure
- Training with inter-observer reliability
  - Go out and talk about setting, measure, collection
  - Go out and try recording while discussing
  - Go out and assess reliability for each behavior
- Always check for observer drift and expectations
- Guard against participant reactivity



# Qualitative Methods

- Data is mainly textual – can be coded at a later date to make quantitative, however, **TEXT** is the raw data.
- Many, many differing philosophies and definitions of this, however mainly meant to assess the **process** of something and the **context** in which it occurs.
- Qualitative research is very, very dynamic and feels “loosey goosey” to many people. There are no pre-conceived notions going in – only a set of guiding principles.



# Principles

- Naturalistic Inquiry (often participatory research)
- Inductive Analysis creating Grounded Theory
- Holistic Approach
- Uses descriptive data techniques
- Personal Insight and Involvement Required
- Dynamic
- Unique Case Orientation – especially with respect to sampling
- Context Sensitive
- Empathetic Neutrality – mix of advocacy and observation
- Flexible



# Sampling Strategies

- In general it is called “purposeful sampling”
- **Different Kinds:**
  - Extreme or Deviant Case
  - Maximum Variation
  - Homogeneous
  - Typical Case
  - Critical Case (also Politically Important Case)
  - Snowball
  - Criterion
  - Confirming and Disconfirming Cases
  - Convenience Sampling

# References for Evaluation

- Rossi PH, Lipsey MW, Freeman HE (Eds.). *Evaluation: A Systematic Approach*. 7th edition, Sage Publications, Inc. Thousand Oaks, CA. 480 pp., 2003.
- United Way of America. *Measuring Program Outcomes: A Practical Approach*. United Way of America, Alexandria, VA. 170 pp., 1996. Item #0989.
- Timmreck TC. *Planning, Program Development, and Evaluation*. 2nd edition, Jones & Bartlett Publishers. Sudbury, MA, 238 pp., 2003.
- Gilmore GD, Campbell MD. *Needs and Capacity Assessment Strategies for Health Education and Health Promotion*. 3rd edition, Jones & Bartlett Publishers. Sudbury, MA, 267 pp., 2005.
- Baumgartner, T. (Ed.). *Measurement for Physical Education and Exercise Science*. 7<sup>th</sup> edition, McGraw Hill Companies. 540 pp., 2002.



# Websites

- <http://www.drjamesallis.sdsu.edu/measures.html>  
(every measure you can think of for physical activity)
- <http://www.ipaq.ki.se/>  
(International Physical Activity Questionnaire)
- <http://www.sdnnonline.org>  
(San Diego Nutrition Network)
- <http://www.sparkpe.org/index.jsp>  
(SPARK program)
- <http://www.sph.uth.tmc.edu/catch/>  
(CATCH program)
- <http://www.fitnessgram.net>  
(FITNESSGRAM testing with ACTIVITYGRAM)
- <http://www.ccwsd.net>  
(Coalition on Children and Weight)
- <http://www.cdc.gov/growthcharts/>
- <http://eddataonline.com/fitness/2003/data/home.cfm>  
(FITNESSGRAM California results)