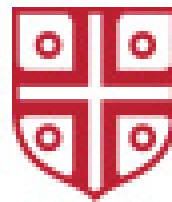# Determine Impact and Maximize It!

SNEB 2018

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For the next hour...

1. Describe program evaluation.

2. Discuss various behavioral theories and constructs for different populations and scenarios.

3. Apply principles of survey tool development and design processes to effectively adapt or design tools for use with target population for intentional measurement of behavior change.

4. Effectively critique survey tools.

   - Art and statistics!!

For all your Efforts and Energy…

http://www.successfulacquisitions.net/wp-content/uploads/2016/05/4-Ways-to-Maximize-Effectiveness-of-Due-Diligence-850x450.jpg

What is Program Evaluation?

- "An evaluation is a purposeful, systematic, and careful collection and analysis of information used for the purpose of documenting the effectiveness and impact of programs, establishing accountability and identifying areas needing change and improvement."

- Interpret and judge the achievement. Asks:

  - At what level did the participant perform?

  - Did the program meet the objectives? Was it well done?

http://www.janetwall.net/attachments/File/9_Step_Evaluation_Model_Paper.pdf

Evaluation Differs from...

Assessment

- Systematic formal process to determine what participants know.

- Begins with identification of learning goals and ends with a judgment concerning (evaluation) of how well goals were attained.

Measurement

- Assigning numbers to results (quantifies assessment)

Key Evaluation Domains

Formative/Process

- Examines *processes during*.

- Purpose of monitoring *progress*. Was the program implemented as planned?

- More narrow and detailed in scope.

Summative/Outcomes

- Examination after the program is implemented and completed.

- Looks at effectiveness of the program (short, intermediate, and long-term). Reports *final* achievement.

- More general, broader in scope

Evaluation Process:

Step 1

1. **Engage Stakeholders.**
2. Describe the Program.
3. Develop a Logic Model.
4. Specify the Evaluation Questions. (adapt, adopt, construct)
5. Create Data Collection Action Plan
6. Collect Data (may need pilot)
7. Analyze data
8. Document Findings
9. Disseminate Findings
10. Feedback to Program Improvement

Engage the Stakeholders

- Stakeholders = people or organizations invested in the program, request the results, and/or have an investment in what will be done with the results of the evaluation.

- Examples = funding agencies, partner organizations, administrators, staff, patients or clients.

Evaluation Process: Step 2

1. Engage Stakeholders.
2. **Describe the Program.**
3. Develop a Logic Model.
4. Specify the Evaluation Questions. (adapt, adopt, construct)
5. Create Data Collection Action Plan
6. Collect Data (may need pilot)
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Describe the Program

- **Need or Problem**

- Targeted group or population needing change (who)

- Measureable Outcomes

- Activities

- Resources (Inputs) and Outputs

Target Group

Consider:

- Age

- Cultural background

- Educational background

- Educational needs

- Number of participants

- Psychographics

Measureable Outcomes

- Outcome drives the content and evaluation process

- Developed and written? Measurable?

  - Describes action or activities – uses appropriate verb

    - WHAT needs to be measured?

  - Criterion for performance? (How well?)

  - Condition for performance?

- Match?

Performance Objectives: Bloom's Taxonomy

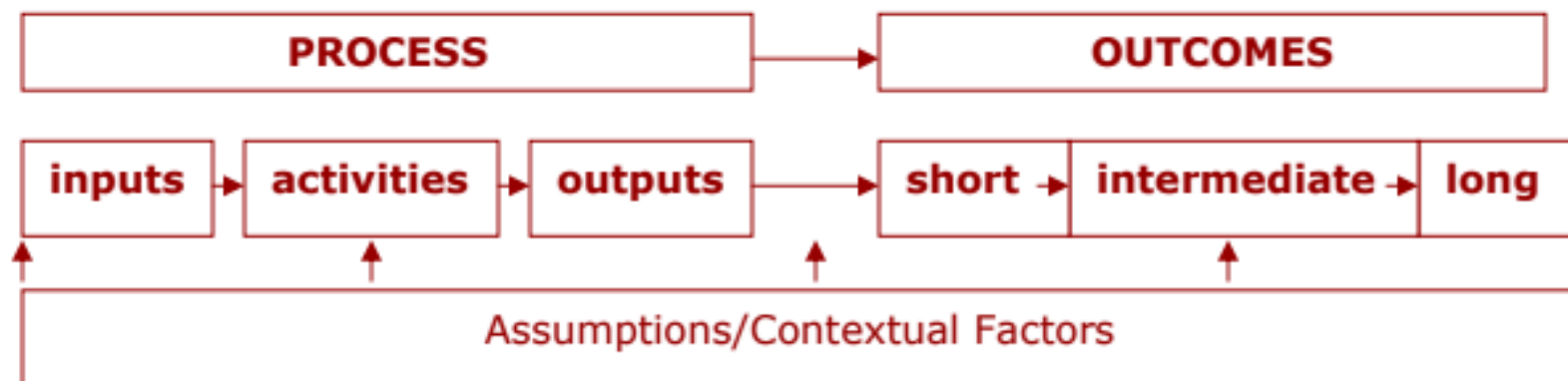By *Jessica Shabatura* -https://tips.uark.edu/using-blooms-taxonomy/
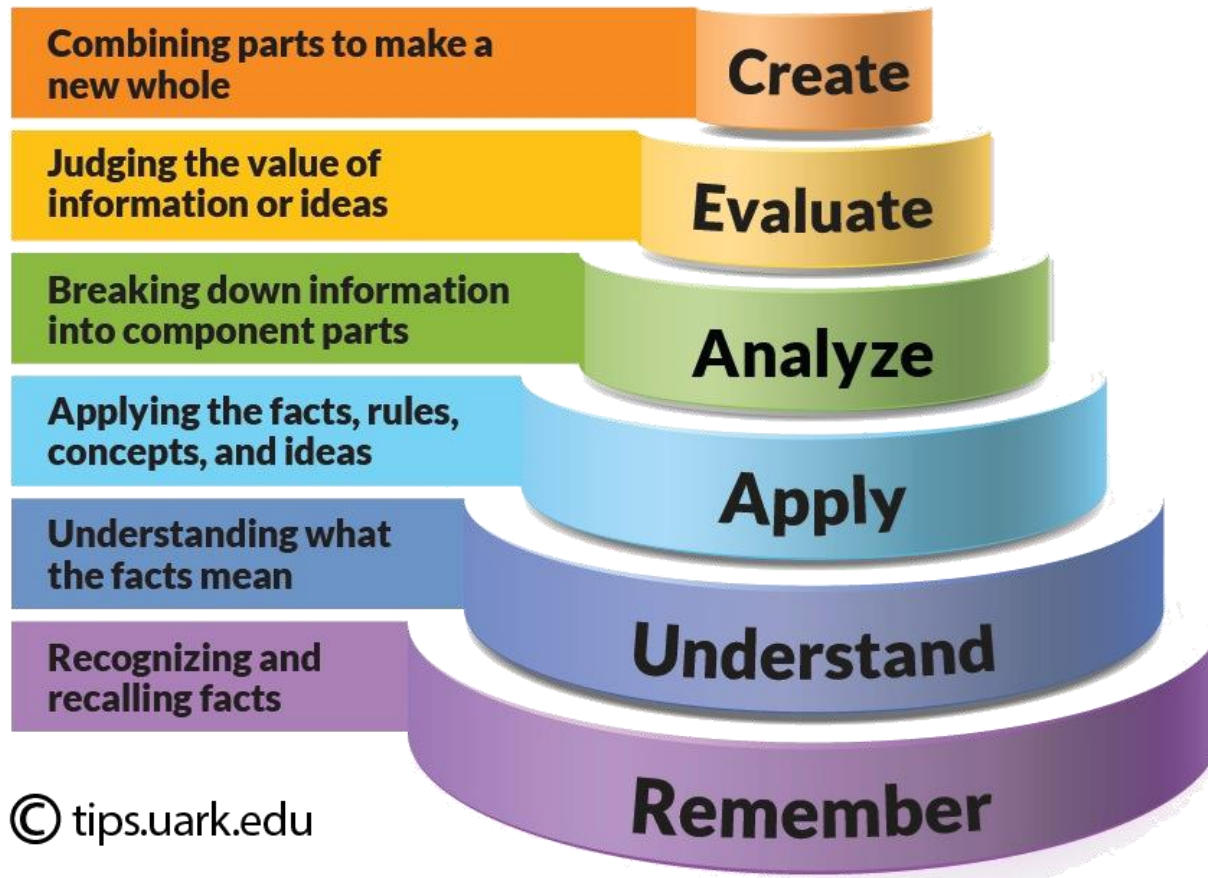
Evaluation Process:
Steps 3 and 4

1. Engage Stakeholders.
2. Describe the Program.
3. **Develop a Logic Model.**
4. **Specify the Evaluation Questions. (adapt, adopt, construct)**
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Logic Model

- A Logic model is a tool for graphic representation for planning, describing, managing, communicating, and evaluating a program or intervention.

  - Not static (revise as lessons learned).

PROCESS			OUTCOMES		
inputs	activities	outputs	short	intermediate	long

Assumptions/Contextual Factors

https://www.cdc.gov/dhdsp/docs/logic_model.pdf

Logic Model Process

- Inputs = Resources

  ➤ Funding.

  ➤ Your partners.

  ➤ Staff and volunteer time

  ➤ Technical assistance.

- Activities = Events

  ➤ Train health care partners and staff in clinical guidelines.

  ➤ Develop a community health communication campaign

- Outputs = direct tangible results of activities

Logic Model Outcomes

- Short term outcomes are immediate effects

  ➢ Focus on knowledge and attitudes

- Intermediate outcomes

  ➢ Behavior, normative, and policy changes

- Long-term outcomes can take years to accomplish

  ➢ Desired results of the program

- Impacts might not be reflected in the logic model

  ➢ Ultimate impacts of the program

Relationship Between Theories and Logic Model

18
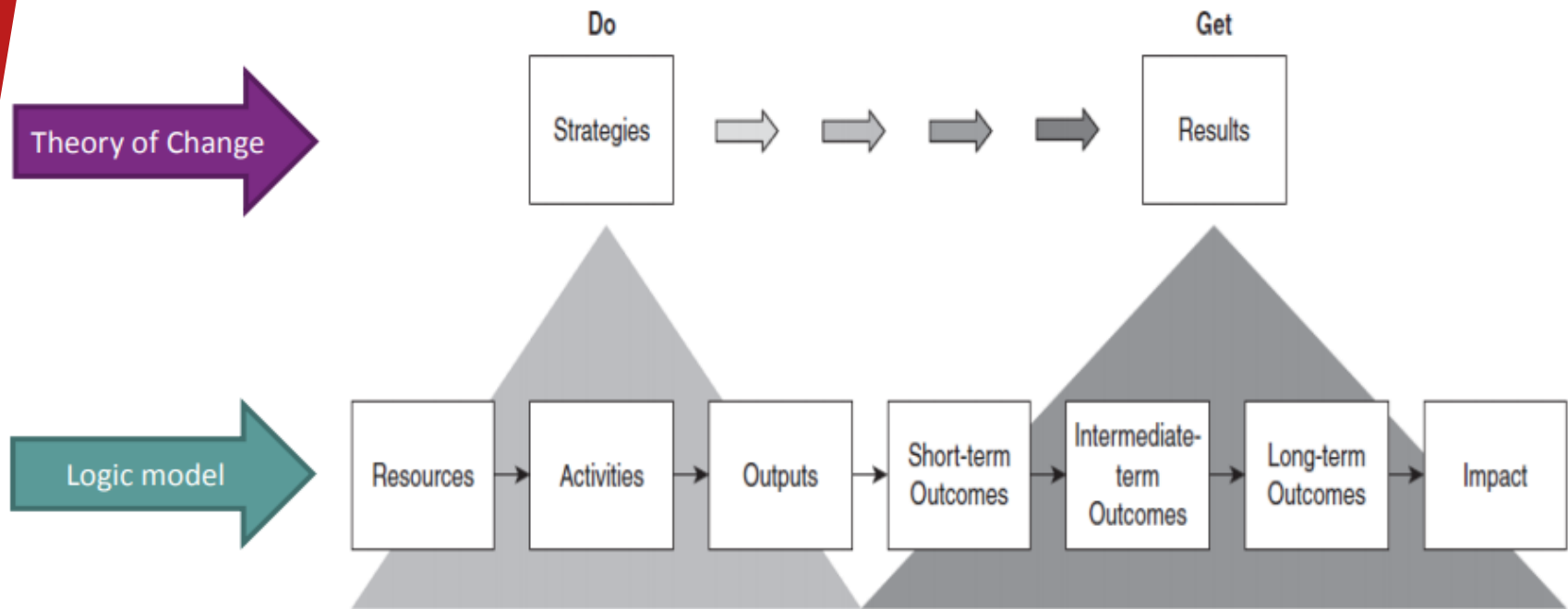
Behavioral Change Theories: Often Overlooked Opportunity
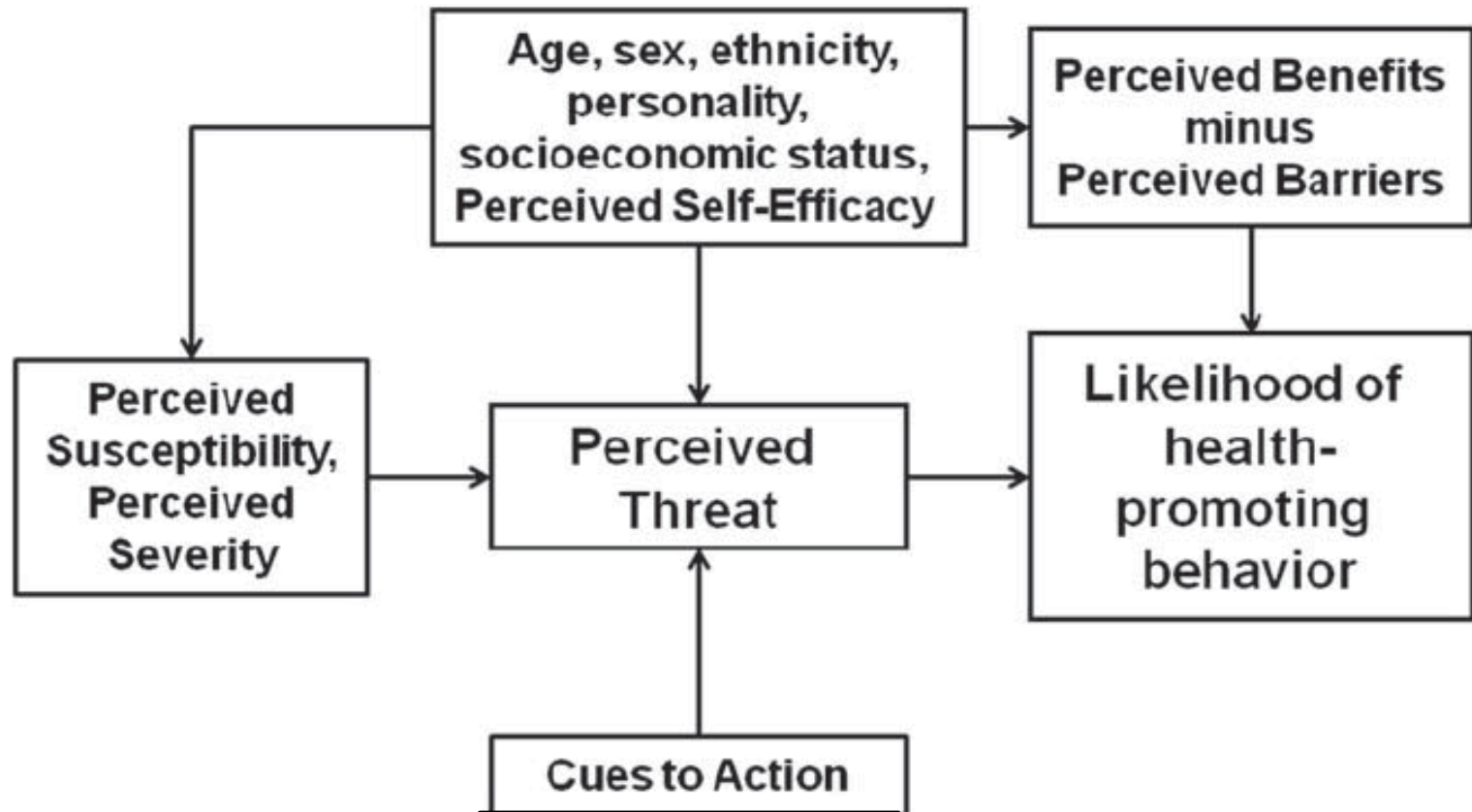
Explanatory (Why)

- Describes the reasons why a problem exists

- Guides finding which factors add to a problem.

Change Theory (Which)

- Determine which strategies or messages to use

Focus program towards audience and the factors impacting behavior

Health Belief Model (HBM)

HBM Example Questions

Construct	Variable from Bone Health program
Perceived susceptibility	Osteoporosis can happen to me
Perceived severity	If I had osteoporosis it would affect my life.
Perceived barriers	Calcium-fortified foods are too expensive.
Perceived benefits	Vitamin D intake now will affect my bone health.
Self-Efficacy	I can find the calcium content of foods by reading food labels.

Scale:

Strongly agree – Agree- Neutral- Disagree – Strongly Disagree

Plawecki K and Chapman-Novakofski K. Effectiveness of community intervention in improving bone health behaviors in older adults. *Journal of Nutrition in Gerontology and Geriatrics*. 2013;32(2):145-160

Transtheoretical Model (Stages of Change)
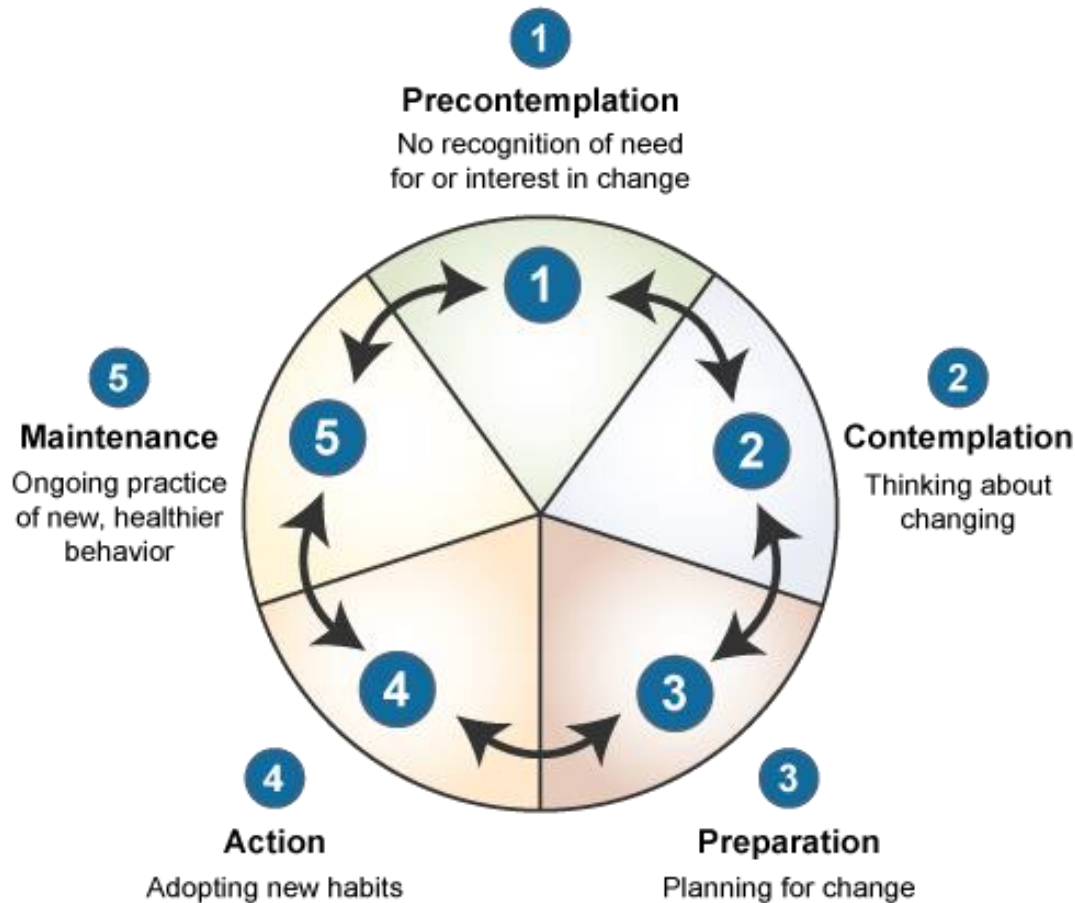
Prochaska, J. O. & Di Clemente, C. C., (1982). Transtheoretical therapy: Toward a more integrative model of change. Psychotherapy: Theory, Research and Practice, 19(3), 276-288. Figure 2, p. 283.
Image: https://cher.unc.edu/cher-term/transtheoretical-model-stages-change/

Fish Intake SOC (single Q)

Which of the following best describes your OVERALL position about eating the recommended 2 servings of fish weekly? Check one.

	a.	I do not eat fish because I am a vegetarian or vegan.
	b.	No, I have never considered changing my diet to include fish.
	c.	No, I do not eat two servings of fish weekly AND I do not intend to change this within the next 6 months.
	d.	No, I do not eat two servings of fish weekly but I intend to change this within the next 6 months.
	e.	No, I do not eat two servings of fish weekly, but I intend to change this within the next month.
	f.	No, I have tried to make this change to eat two servings of fish weekly but have been unsuccessful, AND I intend to change this within the next month.
	g.	Yes, and I have started eating two servings of fish weekly in the last 6 months.
	h.	Yes, and I have been eating two servings of fish weekly done for more than 6 months.

By Catherine Arnold

Self-Efficacy

- Self-efficacy = perceived confidence in performing a task
- Part of the:
  - Health Belief Model
  - Transtheoretical Model
  - Social Cognitive Theory
- Common strategies:
  - Setting incremental goals
  - behavioral contracting with specified goals and reward); and
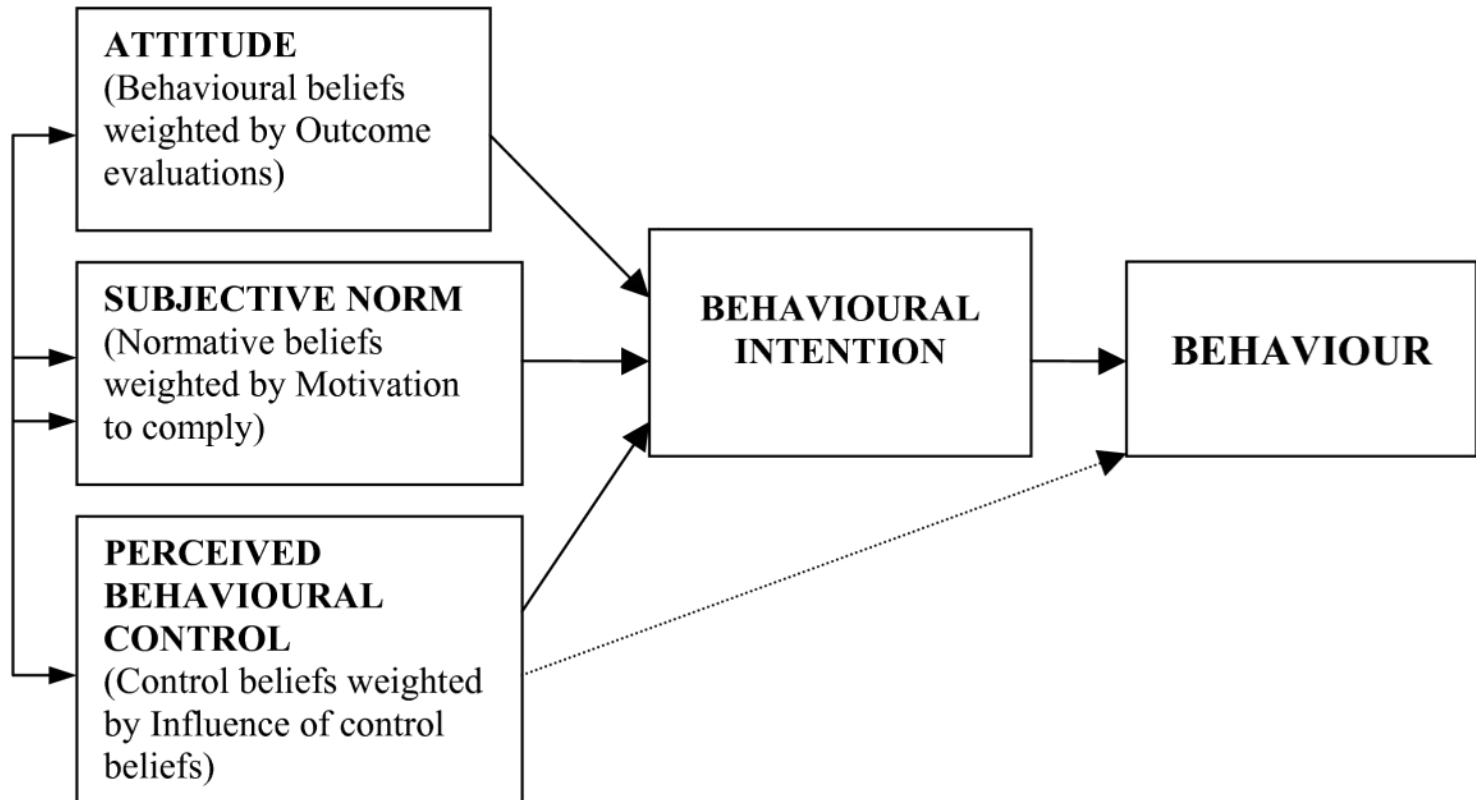 - monitoring and reinforcement

Self-Efficacy Scale

The following are statements of **CONFIDENCE** related to exercise. For each statement, use this scale where "0" is "Not confident" and "10" is "Completely or 100% Confident," to circle the number that best reflects how *you* feel about each statement. *(note: there would be a table to the right)*

Physical Exercise Self-Efficacy Scale (PESES)
I can manage to carry out my exercise intentions even:
When I have worries and problems
If I feel depressed
When I feel tense
When I am tired
When I am busy

Bebeley SJ, Liu Y, Yi-gang W. Physical exercise self-efficacy. International *Journal of Science and Research*. 2017: 6(8):81-85.

Theory of Planned Behavior

https://blogs.ntu.edu.sg/hp331-2014-12/files/2014/11/TPB.jpg

Example Questions

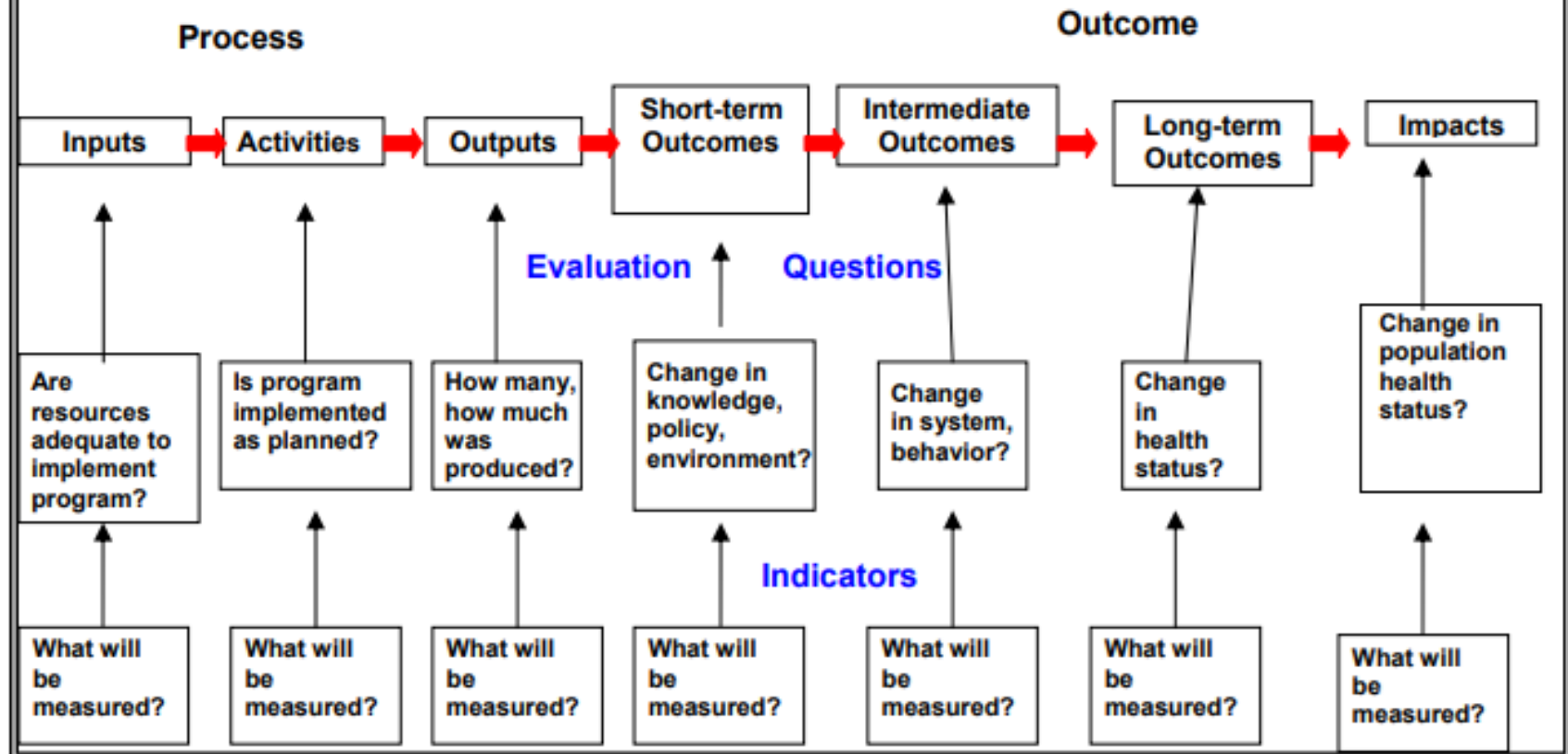| Construct	Variable
Attitude	I'm too old to exercise.
Subjective Norm	My family/friends encourage me to exercise.
Intention	I intend to include exercise in activities with friends/family in the next 3 months

Plawecki K and Chapman-Novakofski K. Effectiveness of community intervention in improving bone health behaviors in older adults. *Journal of Nutrition in Gerontology and Geriatrics*. 2013;32(2):145-160

Evaluation Process:
Step 4 con't

1. Engage Stakeholders.
2. Describe the Program.
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4. **Specify Evaluation Questions. (adapt, adopt, construct)**
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Mapping Evaluation Questions and Indicators to a Logic Model

Process

Outcome

| Inputs | Activities | Outputs | Short-term Outcomes | Intermediate Outcomes | Long-term Outcomes | Impacts |

Evaluation Questions

Are resources adequate to implement program?

Is program implemented as planned?

How many, how much was produced?

Change in knowledge, policy, environment?

Change in system, behavior?

Change in health status?

Change in population health status?

Indicators

What will be measured?

What will be measured?

What will be measured?

What will be measured?

What will be measured?

What will be measured?

What will be measured?

https://www.cdc.gov/dhdsp/docs/logic_model.pdf

Conceptualization of "What"

Survey tool helps us know if we meet objectives

- Be clear as to which variables are to be assessed and how.

- Align questions with the educational objectives(s) [or hypothesis if research]

  - What do we NEED to know?

    - Attitudes? Knowledge/skill gain?

- Consider RELEVANCE.

- Consider cost.

Instruments

- Classified based on who provides the information:
  - Participants: Self-report data
  - Directly or indirectly from participants:
  - From informants

- Types of instruments
  - Tests
  - Surveys
  - Tally sheets
  - Time-and-motion logs
  - Observation forms

Adoption of Instruments

- *Don't reinvent the wheel!*
- Check reliability and validity
- Check target audience
- Match your needs
- Review for Usability.
  - Administration - time?
  - Clarity of directions?
  - Scoring?

General Construction Principles

- Instrument Format
  - Group like responses
- Question Order
  - Important items 1st
- Provide Directions
  - …for every question
  - Return method

Reliability (Precision)

Evidence of Reliability

- Stability
- Equivalence
- Internal consistency
- Consistency of raters

Ways to Increase

- Increase variability
  - Increase number of test items
  - Vary item difficulty
  - Vary item types

This target illustrates good reliability with the darts hitting nearly the same place. Reliability has to do with the consistency or repeatability.

Validity (Accuracy)

Evidence of Validity

- Content
- Construct
- Criterion
- Face

> **If there is good reliability (consistency), we have the potential for strong validity; must be reliable to be valid.**

Avoid

- Unclear directions
- Ambiguous statements
- Unintended clues
- Complicated sentence structure
- Difficult vocabulary
- Identifiable pattern of answers
- Overemphasis on easy to assess items

35

Evaluation Process:

Step 5

1. Engage Stakeholders.
2. Describe the Program.
3. Develop a Logic Model.
4. Specify the Evaluation Questions. (adapt, adopt, construct)
5. **Create Data Collection Action Plan**
6. Collect Data (may need pilot)
7. Analyze data
8. Document Findings
9. Disseminate Findings
10. Feedback to Program Improvement

Action Planning

- Data Collection methods can include: Activity Logs and Document Review, Focus Groups, Interviews, Observations, and Surveys

- Example plan:

Evaluation Question 1 To what extent do 9th grade students consider non-traditional occupations as part of their career exploration?	What is Collected Listing of 5 top occupations of interest Gender	How Collected/What Technique Counselor-developed survey of students
From Whom/Data Sources 9th grade students	When Collected and By Whom Counselor assistant during the week of May 4, 2008 at 11 am	How Data are to be Analyzed Frequency count of non-traditional occupations by male and female

Evaluation Process:

Steps 6 and 7

1. Engage Stakeholders.
2. Describe the Program.
3. Develop a Logic Model.
4. Specify the Evaluation Questions. (adapt, adopt, construct)
5. Create Data Collection Action Plan
6. **Collect Data (may need pilot)**
7. **Analyze data**
8. Document Findings
9. Disseminate Findings
10. Feedback to Program Improvement

Testing the test: Before Pilot

- Reviews by:
  - Subject matter experts
  - Design experts
  - Reviews by persons typical of response population
- Use "Think-aloud" method
  - Use tape recorder

Field Pre-test or Pilot Test

- Pilot Sample
    - Smaller number and representative (e.g., demographics)

- Use to examine:
    - Readability and language
    - Willingness to complete all questions
    - Time estimate for completion
    - Suggestions for improvement Procedures Reliability (statistics)

Response Rate

- Aim for a high number of respondents because a low response rate can introduce bias.

- If you don't get a high response rate, add the caveat that the results may not be representative of the entire population.

- Ways of increasing your response rate…

Item Analysis

- Process of assessing the quality of test items
  - 'Never on the same day'
- Judgmental (human judgment)
  - For example, ask "Was this a good distractor?"
- Empirical
  - Item difficulty
  - Item discrimination
  - Item consistency… refers to reliability

Analysis of Results

Tests of associations

- Correlations
- Chi-square

Tests of differences

- *t*-test
- ANOVA
- Regression
- (lots more!)

Evaluation Process:

Steps 8-10

1. Engage Stakeholders.
2. Describe the Program.
3. Develop a Logic Model.
4. Specify the Evaluation Questions. (adapt, adopt, construct)
5. Create Data Collection Action Plan
6. Collect Data (may need pilot)
7. Analyze data
8. **Document Findings**
9. **Disseminate Findings**
10. **Feedback to Program Improvement**

Program Evaluation Report

- Clear and precise program description.

- The purpose, goals, and measurable objectives.

- Description of resources, participants, and activities.

- Data collection procedures, instruments, and outputs.

- Methods of analysis and outcomes/impact. Qualitative findings (as applicable).

- Conclusions and recommendations.

- Applications of findings .

Disseminate Findings

- Tailor the information to the needs and wants of the particular audience.

- Techniques to disseminate may include:

  - Presentations to institution

  - Journal articles

  - Public or lay presentations

  - Newspaper or other media, blogs, podcasts

  - GEM

Summary – Key Points

- Measurable outcomes are the drivers

- Consider processes and outcomes

- Health behavior theories provide solid foundation for health education programs

- Apply principles of instrument design to determine if efforts effective (e.g., reliability, validity)

- Analyze and interpret results

- Publish! a GEM! an article! Present!

Thank you!