Selecting the right research instrument: Going beyond the title and reported psychometrics

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Outline

- Using the right instrument
- Instrumentation Criteria
- Adherence to theory
- Critical steps in measurement
- Questions and Comments
Selecting the right instrument

- Locating instruments measuring the variable
- Assessing the available instruments
- Validating the selected instrument for your study
- Refining the instrument as needed
- Developing a new one if necessary
Instrumentation Criteria

- Consistent with theory, research question, and variable definition
- Appropriate for study design
- Feasible
- Ethical/Legal
- Reliable
- Valid
Measurement

- Definitions
- Levels
- Perspectives
- Sources of inaccuracy
- Psychometrics
Types of Instruments

- Physiologic
- Cognitive
- Psychomotor
- Affective
- Interviews
- Observation
- Documents/diaries
Adherence to Theory

- The title of the instrument
- Dimensions of the theory being measured
- Variable definitions consistent with the theory
- Completeness in covering concepts
- Format of the instrument
SELF-EFFICACY

“Self-efficacy is the belief in one’s capabilities to organize and execute the sources of action required to manage prospective situations.”

Bandura, 1986
Diagrammatic Representation of Self-Efficacy

(Bandura, 1977, p. 22)
Behavior Specific Confidence

- Specific situation and tasks
- Domain-related activities
- Not personality trait
- Level can vary in different situations
**Efficacy Expectations**

- **Magnitude** – the belief one is capable of performing specific tasks at various levels of difficulty

- **Strength** – the sum of confidence ratings for the behaviors

- **Generality** – relationship of one’s beliefs either within the domain, across domains, or across time
Outcome Expectations

- One’s belief that performing the behavior or behaviors will lead to the desired outcome.
- One can believe the task can be accomplished, but not lead to the expected outcome.
Self-Efficacy Model

Person
- Perception
- Self - Referent

Efficacy-Expectations
- Magnitude
- Strength
- Generality

Information Sources
- Performance
- Vicarious Experience
- Verbal Persuasion
- Self Appraisal

Behavior
- Initiation
- Effort
- Persistence

Outcome

Outcome-Expectations

Bandura, 1977; Shortridge-Baggett & van der Bijl, 1996.
Self-Efficacy Theory – Structural Paths of Influence (adapted from Bandura, 1977; 2002; 2004; Shortridge-Baggett & van der Bijl, 1996)

- **Person**
  - Characteristics
  - Perception
  - Self-referent

- **Efficacy Expectations** (Self-efficacy)
  - Magnitude
  - Strength
  - Generality

- **Socio-structural Factors**
  - Facilitators
  - Impediments

- **Outcome Expectations**
  - Physical
  - Social
  - Self-Evaluative

- **Information Sources**
  - Performance
  - Vicarious Experience
  - Verbal Persuasion
  - Self-Appraisal

- **Behavior**
  - Initiation
  - Effort
  - Persistence

- **Outcome**
Different Wording for Self-Efficacy

- I am confident I can...
- I think I am able to...
- I am convinced I am able to...
**Instructions and Sample Question for DMSES**

Self-Efficacy (or confidence) Questionnaire For People Living With Type 2 Diabetes.

**Directions**
Below is a list of activities you have to perform to manage your diabetes. Please read each one and then put a line [/] through the number which best describes how **confident** you usually are that you could carry out that activity. For example, if you are completely confident that you are able to check your blood sugar levels when necessary, put a line through 10. If you feel that most of the time you could not do it, put a line through 1 or 2.

I am confident that……..

<table>
<thead>
<tr>
<th>Cannot do</th>
<th>Maybe yes</th>
<th>Certain can do</th>
</tr>
</thead>
<tbody>
<tr>
<td>At all</td>
<td>Maybe no</td>
<td></td>
</tr>
<tr>
<td>I am able to check my blood sugar if necessary</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
</tbody>
</table>
Assessment of Three Instruments

- Title inconsistent with the theory
- Format of instrument did not adhere to recommendation
- Partial assessment of the theory
Thank you – now your turn!

Questions & Comments
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References

References (continued)


References (Continued)

