

NCI Big D.A.T.A. Workshop

Health Behavior Theory: Challenges & Opportunities

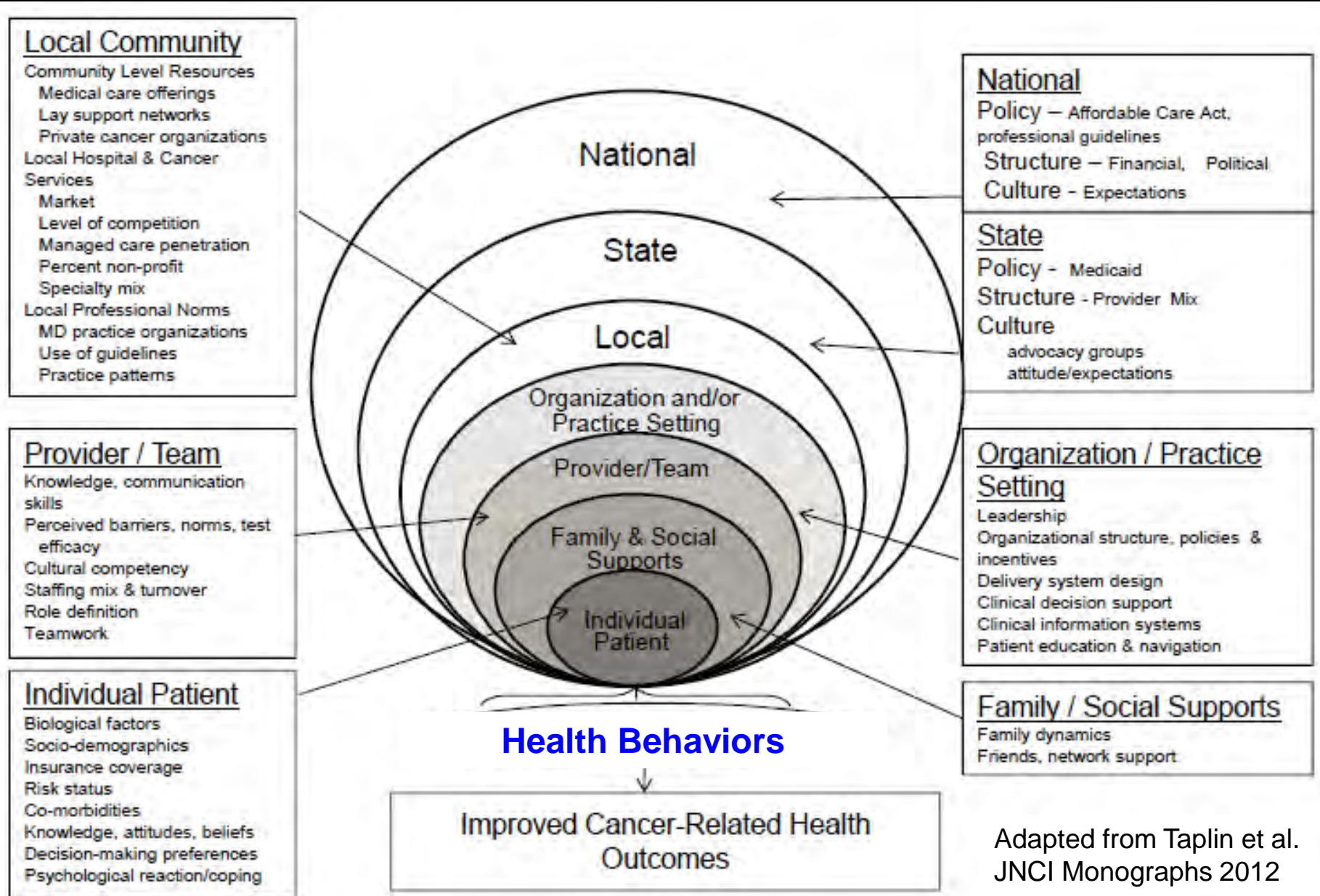
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September 18, 2013

The Multilevel Context of Health Behaviors



Adapted from Taplin et al.
JNCI Monographs 2012

Theories Are Useful...

Explain Health Behaviors

- Health Belief Model
- Theory of Reasoned Action/
Planned Behavior
- Precaution Adoption
Process Model

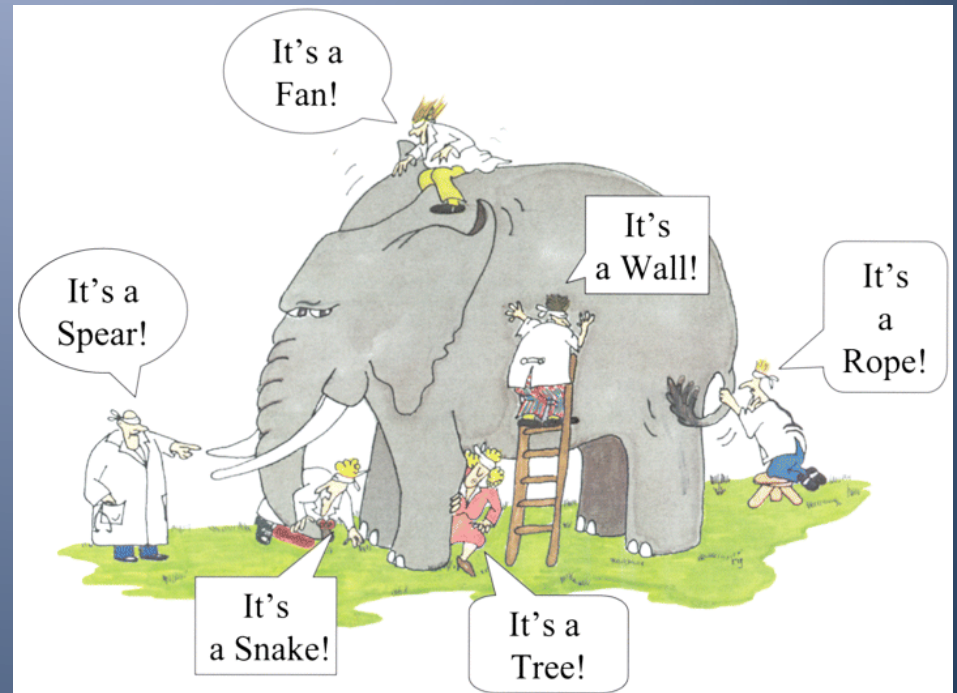
Change Health Behaviors

- Social Cognitive Theory
- Transtheoretical (Stages of
Change) Model

All theories describe a set of concepts/constructs & make assertions about how constructs are related to each other and to health behavior

Challenges to Measuring Latent (Unobservable) Constructs

- Reliable & Valid
- Conceptually equivalent across languages & cultures



Measurement Challenge:

Same Concept across Language & Culture

Attitudes about liver cancer treatment

English:

People with liver cancer always die if they are not treated.

Spanish version 1:

Las personas que padecen de cáncer de hígado mueren de no recibir tratamiento.

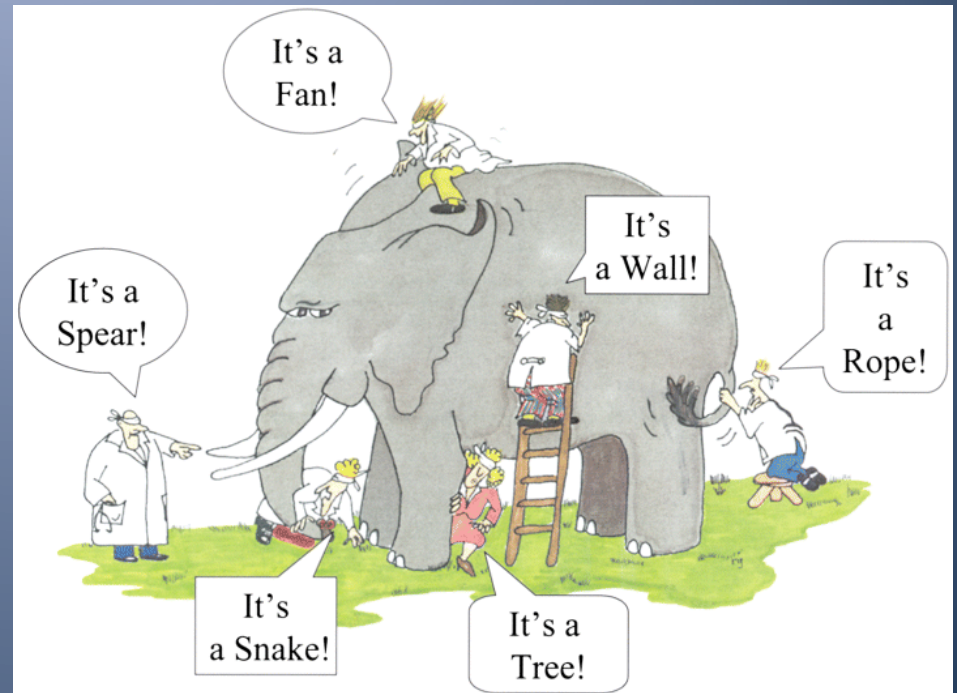
People who suffer from liver cancer die of not receiving treatment.

Spanish version 2:

Las personas que tienen cáncer de hígado siempre mueren si no reciben tratamiento.

Challenges to Measuring Latent (Unobservable) Constructs

- Reliable & Valid
- Conceptually equivalent across languages & cultures
- Conceptually equivalent across administration modes (interviewer vs. self; mail vs. mobile)



Challenges Because of Overlap in Constructs Across Theories

- Similar conceptual and operational definitions
- Acknowledge similar origins
- Focus on identifying unique constructs and unique hypotheses of how constructs are linked



Measurement Challenge: Same Concept but Different Label & Scale

Outcome Expectations

Having yearly mammograms will increase my chances of surviving if I get breast cancer.

Perceived Benefits / Pros

Having a regular mammogram gives me peace of mind about my health.

Perceived Barriers / Cons

Mammograms have high chance of leading to breast surgery that is not needed.

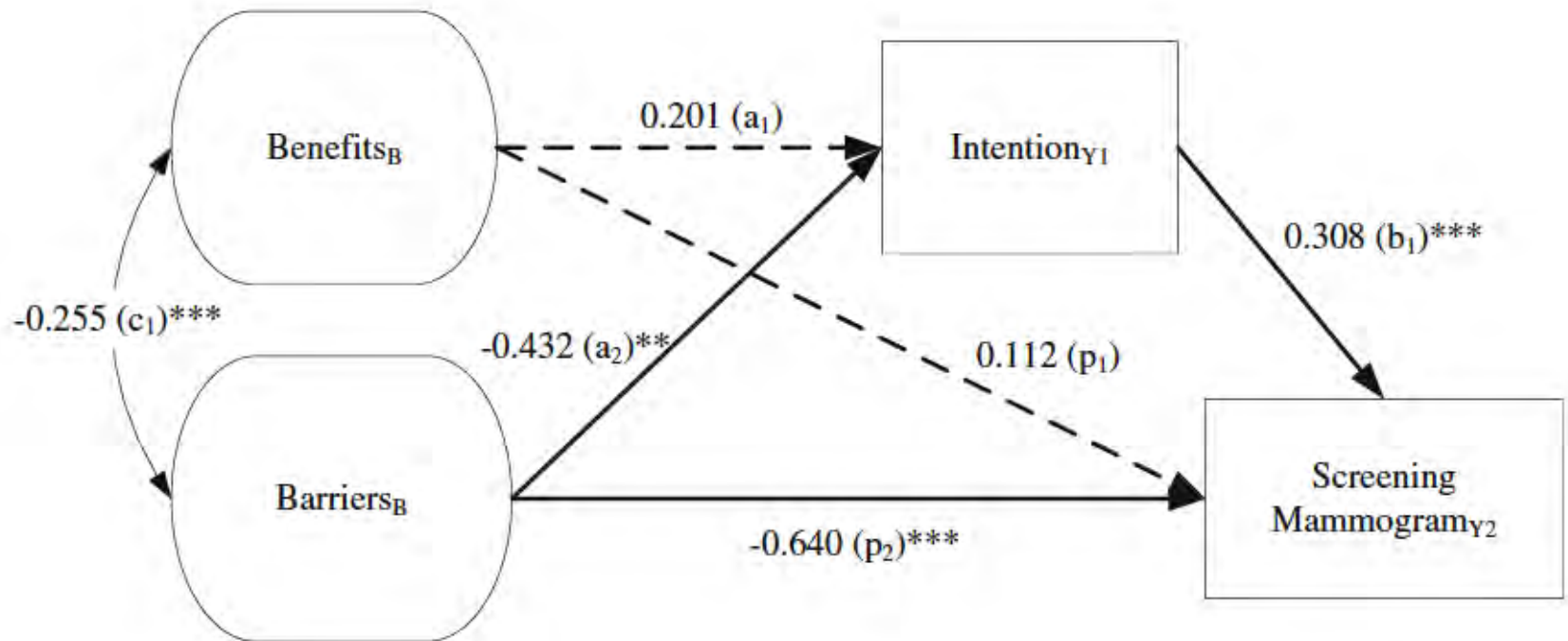
Attitudes toward the Behavior

Competitive Hypothesis Testing

Hypothesis 1:

Do benefits and barriers directly influence mammography screening behavior (HBM: p_1 and p_2) or indirectly influence behavior via intention

(TRA: $a_1 \times b_1$ and $a_2 \times b_1$)?



Opportunity to Use Multiple Data Sources

Use surveys to measure cognitions and perceptions that are unknowable from any other source

What is ideal timing and frequency of measurement?

Link with other data sources to measure behavior:

- Sensors
- Area-based measures
- Electronic medical records and other clinical information systems