THE RIPPLE EFFECT IN CLINICAL INFORMATICS

2018 Clinical Informatics Conference

water-ripple-d-blue-splash-ripples-drops-free-60988.jpg

HOW A SMARTPHONE APPLICATION CHANGES THE BEHAVIORS, THINKING, AND ATTITUDES OF INTERPROFESSIONAL TEAM MEMBERS: FINDING MECHANISMS USING REALIST EVALUATION

Katheryn Courville PhD RN CEN

ANIA
Dallas-Fort Worth Chapter
Where caring and technology meet

CONFLICT OF INTEREST DISCLOSURE

Katheryn A. Courville PhD RN CEN

has no real or apparent conflicts of interest to disclose.

OBJECTIVES

1. The participant will be able to define Realist Evaluation, a methodology used to study complex social interventions

2. The participant will be able to recognize components of a RE (outcomes, mechanisms, and context) from a case study example

3. The participant will develop a "CMO" statement for his/her own technology intervention.
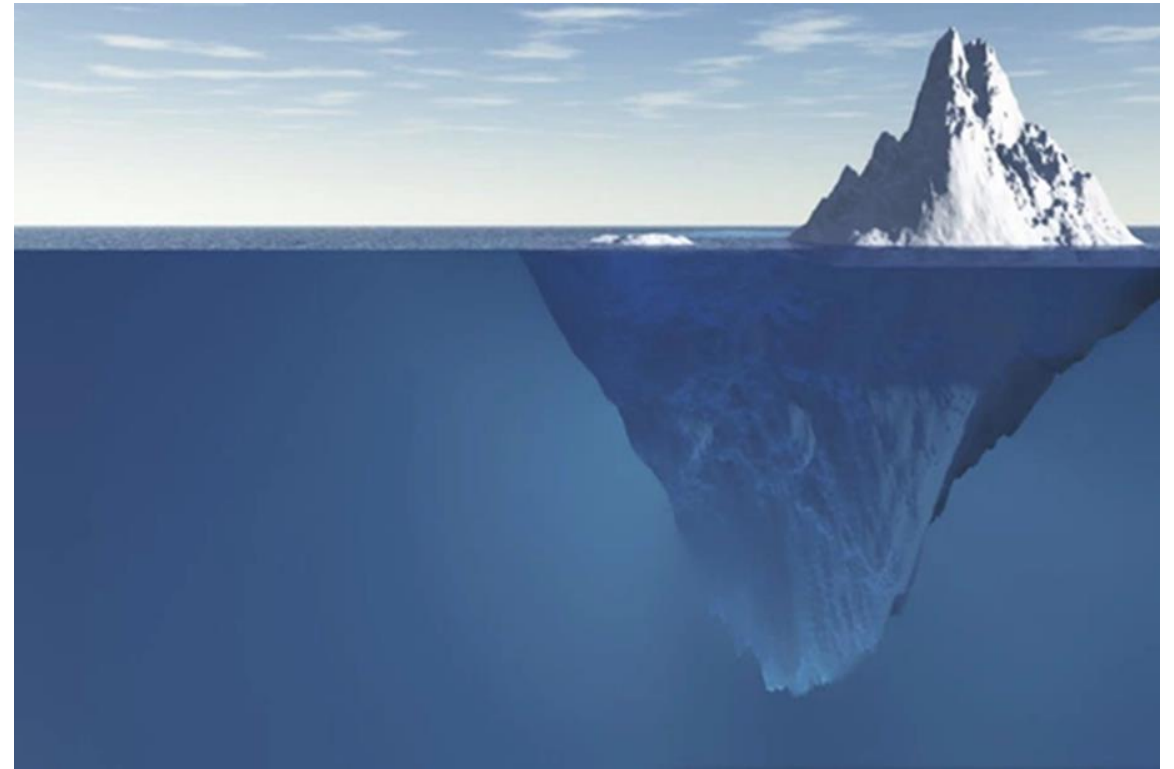
PHILOSOPHY & EPISTEMOLOGY

Positivism
- quantitative

Interpretivisim
- qualitative

Realism
- mixed-methods

THEORY

Propositional Statement / "CMO"

"When I introduce this ICT, it will allow users to change in this way [mechanism] to cause this to happen [outcome], but only in these circumstances [context]"

Intervention Theory

Middle Range Theory

So What?

REALIST EVALUATION
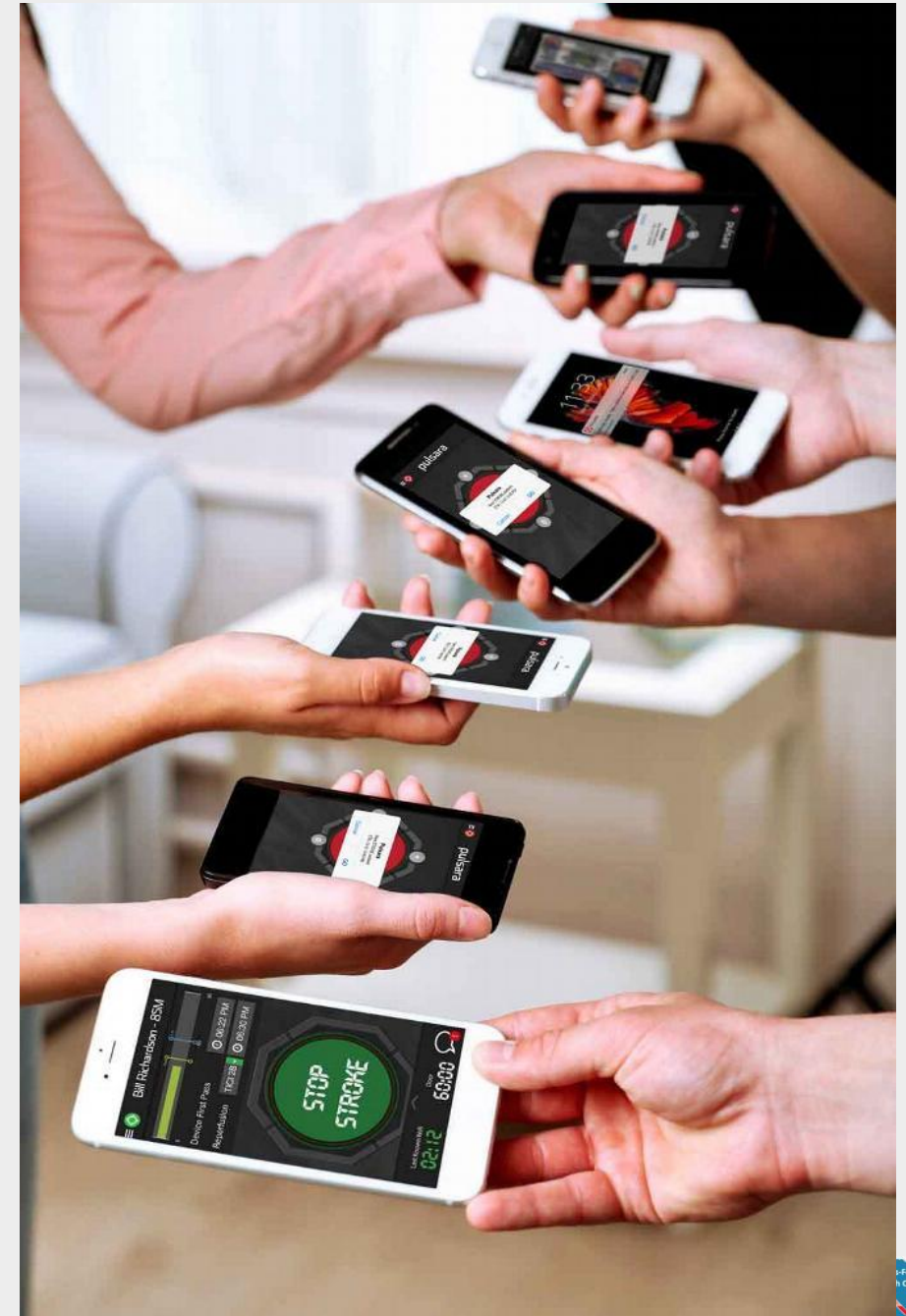### (PAWSON & TILLEY, 1997)

Theory-based

Explanatory

CMO Statements

Tenets:

- Interventions are theories. "If I do this, then this will happen"

- These theories are comprised of propositional statements (CMOs)

- Interventions have many **outcomes**

- The real **mechanism** of action

- **Context** matters

THE SMARTPHONE APP

StopStroke© (Pulsara Inc.)

PHASE 1: THEORY DEVELOPMENT

"*WHAT'S THE APP MEANT TO DO?*"

#1 What's the problem?

ASA

Stroke teams – interprofessional

"Time is brain"

Coordination, collaboration, communication, and urgency

Functions & Features of the App

Real-time data exchange and communication

Standardized communication among team members

Communication becomes data that can be retrieved for reporting purposes

All team members are identifiable, accessible, and can be alerted

One clock keeps time of the entire case from initiation in the field to treatment

Best practices (i.e., updated treatment requirements) are always up-to-date

Simplification of workflows and elimination of nonessential resources

Implementation is easy, not disruptive, and inexpensive

"One source of truth" – everyone sees the same case file

Assists with reporting for accreditation purposes

PHASE 1: THEORY DEVELOPMENT

"*WHAT IS THE APP MEANT TO DO?*"

Data Collection

Developer's website

Other similar mobile/smartphone ICTs

Extant literature & gray literature

Interviews with the software developer

Data Analysis

Retroduction

6 CMOs

PHASE 2: THEORY TESTING

"*DOES THE APP DO WHAT IT IS SUPPOSED TO DO?*"

Data Collection

Setting

Participants

Semi-Structured Interviews

Interview Guide

Statistics

Data Analysis

Existing CMOs:

- Affirmation?

- Refutation?

- Revision?

Evidence

- Stories and accounts

- Middle Range Theory

RESULTS

CMO: When team members are dedicated to team processes and goals (C), the transparency of patient information and team activities provided by the application (F&F) allows users to be recognized for their work (M) leading to improved job satisfaction (O).

"I think that it's a lot more teamwork. It's – neurology is relying on EMT's (paramedics') information. Whereas, before, they (neurologists) wouldn't have had anything to do with them (paramedics). Because they (neurologists) would never have seen them (paramedics)."

"A little bit. It's like, 'Oh cool, my name is on this too' whereas before, they may have your name or not."

MECHANISMS:
COGNITIVE, BEHAVIORAL, OR ATTITUDINAL CHANGES

- Quicker decision making (C)

- Prioritizing (C)

- Personal accountability (A)

- Vicarious accountability (A)

- Appropriate gathering (B)

- Engagement in team (A)

- Reflection (C)

- Personal learning (C)

- Closure (C)

- Feeling connected (A)

- Feeling inefficient (A)

- Competitiveness (B)

REFERENCES

▶ Dickson, R. L., Sumathipala, D., & Reeves, J. (2016). Stop Stroke© acute care coordination medical application: A brief report on postimplementation performance at a primary stroke center. *Journal of Stroke and Cerebrovascular Diseases, 25*(5), 1275-1279. http://dx.doi.org/10.1016/j.jstrokecerebrovascdis.2015.12.001

▶ Pawson, R. (2006). *Evidence-based policy: A realist perspective.* London: Sage.

▶ Pawson, R. (2012). Realist thoughts on Cinderella, Alice in Wonderland and health care interventions. *Nursing Inquiry, 19,* 4-5. http://dx.doi.org/10.1111/j.1440-1800.2011.00561.x

▶ Pawson, R. (2013). *The science of evaluation: A realist manifesto.* London: Sage.

▶ Pawson, R., & Manzano-Santaella, A. (2012). A realist diagnostic workshop. *Evaluation, 18,* 176-191. http://dx.doi.org/10.1177/1356389012440912

▶ Pawson, R., & Tilley, N. (1997). *Realistic evaluation.* London: Sage.

▶ Pulsara (2017). StopStroke© (Version 6.0) [Mobile application software]. Retrieved from http://pulsara.com

QUESTIONS

Katheryn A. Courville PhD RN CEN

Assistant Professor

University of Texas at Tyler

kcourville@uttyler.edu