

Measuring an Evidence-Based Model of Implementation: Preliminary Development and Application of a Survey Instrument

- **Joan M. Cook, Ph.D.,** ^{1,2}
- Richard Thompson, Ph.D. ³
- Stephanie Dinnen, M.S., ¹
- Josef I. Ruzek, Ph.D. ^{2, 4}
- James C. Coyne, Ph.D. ⁵
- Paula P. Schnurr, Ph.D. ^{2, 6}

- ¹ Yale School of Medicine
- ² National Center for PTSD
- ³ University of Illinois at Chicago
- ⁴ Stanford University
- ⁵ University of Pennsylvania and University of Groningen,
the Netherlands
- ⁶ Geisel School of Medicine at Dartmouth



Goals of Study

- Testing comprehensive implementation model (Greenhalgh and colleagues) using single measurement instrument
- Required operationalization of key constructs and development of measure

Greenhalgh Model

- 6 broad elements influence implementation of innovation
 - (1) Perceived characteristics of the given innovation
 - (2) Individual characteristics of potential adopters
 - (3) Communication and influence (e.g., social networks and peer opinion leadership)
 - (4) System antecedents and readiness (inner organizational context)
 - (5) Outer (inter-organizational) context
 - (6) Implementation process

Measure

- No operational definitions or items to measure most of the constructs
- A survey and interview measure were developed (Cook et al., in press), via
 - Systematic literature review of measures for associated constructs and an iterative process of team consensus

Development and Design of Survey 1

- Systematic literature search of keywords representing 53 separate constructs from the six broad domains:
 - Innovation
 - Adopter
 - Communication and influence
 - System antecedents and readiness
 - Outer context
 - Implementation process

Development and Design of Survey 2

- Relevant measures for each construct were assessed to see if they
 - Met operational definitions of the construct(s)
 - Showed adequate reliability, validity, and applicability to healthcare settings
- Items that met these criteria were used to guide survey and semi-structured interview design
 - In some instances (e.g., potential for reinvention), no presently available measure was deemed appropriate
 - Team then created items through a consensus-based iterative process

Development and Design of Survey 3

- Pilot tests of the survey
 - 12 mental health professionals offered feedback on item redundancy and response burden
 - They emphasized that, given the busy schedules of front-line providers, needed to be brief
 - Thus each construct was assessed using a very small number of items, typically two

CPT vs PE 1

- Two EBTs being implemented nationally in VHA mental health
- Prolonged Exposure (Foa and colleagues)
 - Repeated imaginal exposures to trauma memory
 - Repeated in vivo exposures to avoided stimuli/situations
 - Cognitive processing
 - Education and breathing retraining
 - 10-12 sessions
- Cognitive Processing Therapy (Resick and colleagues)
 - Focus on negative meanings/appraisals/“stuck points” associated with the trauma

Sample

- All PTSD treatment providers in 38 VA residential PTSD treatment settings
 - Primarily Caucasian
 - Nearly two-thirds were female
 - Majority was psychologists
 - More than 80% were either psychologists or social workers
- Of 229 eligible, 216 (94.3%) completed the survey
- No significant differences between participants and non-participants, in terms of:
 - Proportion of male participants (37.2% vs. 42.3%)
 - Proportion of doctoral-level psychologists (51.4% vs. 40.7%)

Internal Consistency

- Reliability was generally good for innovation characteristics considering the very small number of items assessing each construct

CPT vs PE 2

- CPT scored significantly higher than PE on
 - Relative Advantage, $t(195) = 4.45, p < .001$;
 - Compatibility, $t(198) = 3.83, p < .001$;
 - Trialability, $t(195) = 8.06, p < .001$;
 - Potential for Reinvention, $t(198) = 6.76, p < .001$;
 - Task Issues, $t(193) = 3.64, p < .005$; and
 - Augmentation-Technical Support, $t(195) = 2.07, p < .05$;
- CPT scored significantly lower than PE on
 - Perceived Risk, $t(198) = 7.36, p < .001$.

PE vs CPT 3

- Preliminary analyses show greater skepticism around PE on the part of clinicians
- VA residential treatment providers reported that CPT was a better fit than PE for their setting
 - CPT easily delivered in a group format
 - Individual PE requires more resources: time and providers
- Reported barriers to PE adoption were primarily structural
- Other perceived difficulties:
 - Marked psychological impairment among veterans (co-morbidities, poor functioning, and concurrent character or substance abuse disorders)
 - Treatment non-compliance
 - Unresolved life crises

Future Research

- Further exploration of the psychometric properties of this survey
 - Temporal reliability (i.e., test-retest reliability)
 - Construct and predictive validity
 - The significant and understandable differences between PE and CPT suggest that the scale has some validity
 - Use in different mental health settings with different providers
 - Utility in predicting successful implementation
 - Use with other **innovations**

Potential Applications

- Facilitation of ability to research a wide range of factors using single measure
- Administrators/treatment developers/trainers may request that providers fill out this survey in order to understand individual and organizational barriers to implementation
- Information can then be used to inform training, help promote provider engagement, assist in problem-solving, and guide the implementation process

Conclusions

- Need for brevity in assessing the many constructs in the Greenhalgh model
- With some rephrasing, the instrument should be applicable to other health care organizations and settings and with a range of innovations