The Use of Fidelity Scales with Evidence-Based Practices

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Program Fidelity

Degree to which a particular program follows the standards for an evidence-based practice (EBP)

What Is a Fidelity Measure?

Tool to assess the adequacy of implementation of a program model

Why is Fidelity Important?

Programs that faithfully implement evidence-based models found to have better outcomes

Uses of Fidelity Scales

- Research
- Quality improvement

Research Uses of Fidelity Scales

- Documenting adherence in program evaluations
- Facilitating communication within the literature
- Synthesizing a body of research
- Identifying critical ingredients of program models

Quality Improvement Uses for Fidelity Scales

- Defining standards at program start-up
- Tracking progress over time
- Making comparisons within a broad dissemination effort
- Identifying programs needing technical assistance

Two Requirements for a Fidelity Measure

- You must have a well-defined program model
- You must have a way to measure the elements in the model

Elements of a Fidelity Measure

- Content
- Format
- Data Collection Methods

Content

- Refers to the criteria (items) by which fidelity is assessed
- Items should comprehensively describe model and differentiate it from:
  - inadequate implementation
  - other approaches

Format for EBP Fidelity Scales

- Each scale consists of 12-28 items
- Items rated on 5-point continuum

  1 = Not Implemented

  5 = Fully Implemented
- ≥ 4.0 considered good implementation

Fidelity Item Example

H1. SMALL CASELOAD

Standard: Client:staff ratio of 10:1 or less

Score	Caseload size
1	50 or more
2	35 – 49
3	21 – 34
4	11 – 20
5	10 or less

Data Collection Procedures for EBP Fidelity Scales

- Ratings made by two independent assessors
- Day-long site visit
- Multiple data sources (interviews, chart review, observation)
- Fidelity report (with narrative + ratings) given to site leadership

Types of Fidelity Items

- Structural
- Clinical interventions

Structural Fidelity Items

- *Policies that can be established through administrative action*, such as:
  - –Daily team meetings
  - –Multidisciplinary staffing
  - –Low caseload ratio
  - –Following a curriculum
  - –Distributing educational handouts

Fidelity Items That Measure Clinical Interventions

- *Practitioner actions that require clinical training*, such as:
  - –Motivational interviewing
  - –Behavioral tailoring
  - –Providing stagewise interventions

Ideal Features of a Fidelity Scale

- Practical to use
- Reliable
- Comprehensive
- Face valid, easy to explain
- Sensitive to change over time
- Discriminate from usual practice
- Predict outcomes associated with the EBP

Earliest and Best-Validated EBP Fidelity Scales

- Dartmouth ACT Scale (DACTS) (Teague, Bond & Drake, 1995)
- Supported Employment Fidelity Scale (Bond et al., 1997)

Discriminant and Predictive Validity of ACT Fidelity Scales

Teague (1998) Study: Differences in ACT Fidelity Using DACTS

Progam Type	# Sites	ACT Fidelity
ACT	14	4.01
Vet Admin ICM	10	3.52
Homeless CM	15	3.42
Traditional CM	11	2.38

Conclusions about the DACTS (Teague Study)

- Simple to use
- Measures items that make sense to clinicians
- Distinguishes clearly between different types of case management

ACT Fidelity Scale Correlations with Hospital Reduction

(McGrew, Bond, & others, 1994)

Total ACT Scale	.60**
Staffing	.54*
Organization	.56**
Service Intensity	.33

*p<.05 **p<.01

(N = 18 ACT Teams)

Critical Ingredients Most Predictive

- Nurse on team
- Shared caseloads
- Daily team meetings
- Team leader sees clients
- Total number of contacts

(McGrew, Bond et al., 1994)

McHugo (1999): Predictive Validity of ACT Fidelity Scale

- Clients with mental illness and substance use disorders received ACT in 7 mainly rural mental health centers
- 4 high-fidelity ACT teams (n = 61)
- 3 low-fidelity ACT teams (n = 26)
- Rigorous 3-year followup study

NH ACT Study (McHugo, 1999)

	High ACT Fidelity	Low ACT Fidelity
Treatment Dropouts	15%	30%
Substance Use in Remission	58%	13%
Hospital Admissions	2.87	4.69

Prediction of Dissatisfaction with Services from ACT Fidelity Scale

- Consumers receiving low-fidelity ACT services have more criticisms than those receiving high fidelity services

(McGrew, Wilson, & Bond, 2002)

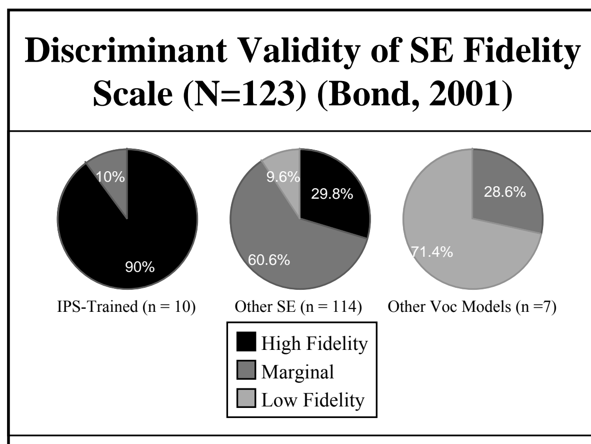
Impact of ACT Fidelity: Findings from a Meta-Analysis

- Organization (team responsible for client, daily team meetings, shared caseloads) predicted better outcome
- Staffing (low client:staff ratio, inclusion of psychiatrist and nurse) did not predict outcome

(Burns et al., 2007)

Discriminant and Predictive Validity for Supported Employment Fidelity Scale

Discriminant Validity of SE Fidelity Scale (N=123) (Bond, 2001)



Correlation Between SE Fidelity and Competitive Employment Rates

Location	# sites	Finding	Reference
Vermont	10	r = .76	Becker (2001)
Indiana	20	r = .42	McGrew (2005)
Indiana	17	r = .37	McGrew (2007)
J&J states	26	r = .51	Becker (2006)
Maryland	VR Status 26 closures	EBP SE = 60% Non-EBP = 36%	Hayward (2007)
Kansas	11	High employment rates in high fidelity sites	Gowdy (2003)
Europe	6	High employment rates in high fidelity sites	Burns (2007)

Predictive Validity of SE Fidelity Scale (Becker, 2001)

Total Scale	.76**
Items:	
Community-Based Services	.82**
Staff Focused on Voc Only	.69*
Zero Exclusion Policy	.43

Correlations with competitive employment rates in 10 Vermont mental health centers

Extending the Fidelity Concept to Other EBPS

EBP Fidelity Scales

- Pragmatic scales assessing degree of EBP implementation
- ACT and SE have well-validated scales
- 4 other scales developed for National EBP Project
- Common measurement methodology for all 6 EBPs

National EBP Project Fidelity Scale Development for 4 EBPs

- Collaboration between toolkit developers and IUPUI team
- Use of common template for all 6 EBPs
- Teleconferences, feedback from practitioners, many drafts, etc., over 2-year period
- Continued refinement during early period of implementation

1998 RWJ Conference on Evidence-Based Practices

- Assertive community treatment (ACT)
- Supported employment (SE)
- Integrated dual disorders treatment (IDDT)
- Illness management and recovery (IMR)
- Family psychoeducation (FPE)
- Medication management approaches in psychiatry (MedMAP)

National EBP Project Design Implementation Phase

- 53 sites in 8 states
- 5 EBPs implemented
- Fidelity assessed at baseline, 6, 12, 18, and 24 months
- Fidelity assessment used as quality improvement tool
- 4.0 used as standard of "adequate fidelity"

Methodological Findings

- Excellent interrater reliability
- Anecdotal findings:
  - Independent raters give more realistic ratings than program staff
  - In-person more valid than telephone
  - Fidelity reports do influence programs to change
  - Fidelity assessment better if raters follow protocol (See Fidelity of Fidelity Scale)

Interrater Agreement Between EBP Fidelity Assessors (Intraclass Correlation)

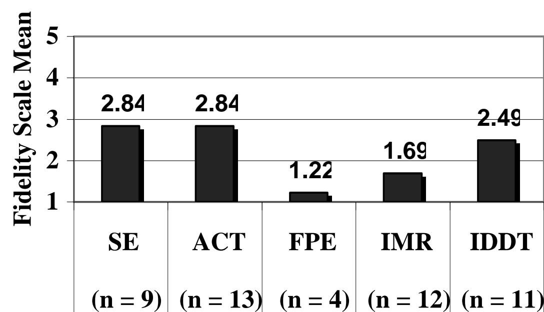
GOI	.94 (N = 197)
DACTS	.99 (N = 52)
FPE Fidelity Scale	.99 (N = 24)
IDDT Fidelity Scale	.89 (N = 48)
IMR Fidelity Scale	.97 (N = 50)
SE Fidelity Scale	.98 (N = 34)

Substantive Questions

- Before implementation of an EBP, do programs have low fidelity?
- Do sites seeking to implement EBP achieve high fidelity?
- Are some EBPs more successful at achieving fidelity?
- What is the rate of improvement?

Finding #1:

Usual Practice Looks Different



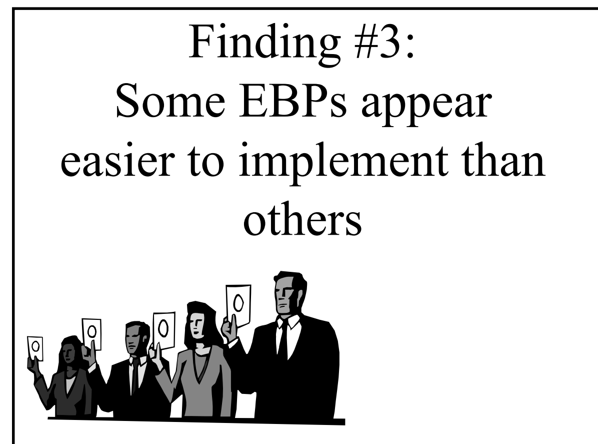
Finding #2:

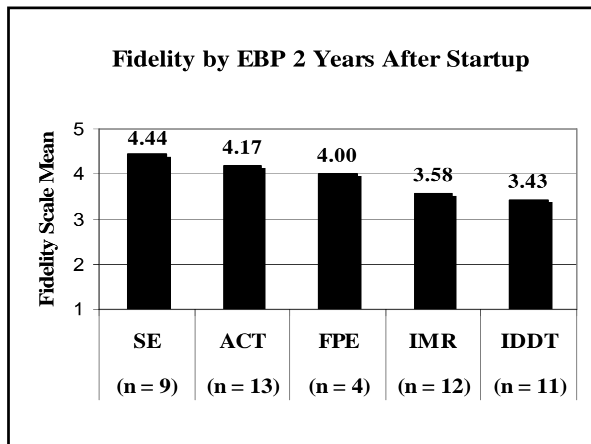
The cup is half full:

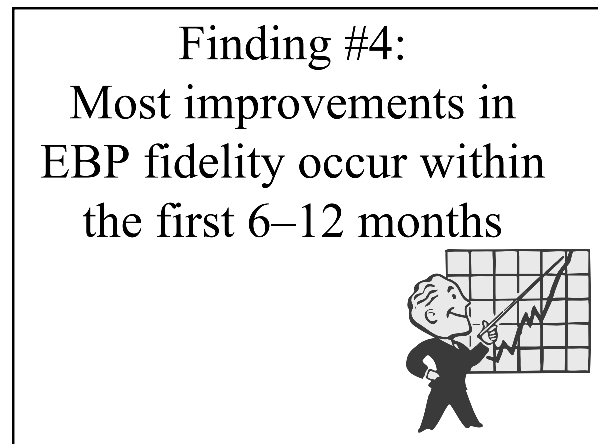
About Half of the Sites Achieved High Fidelity

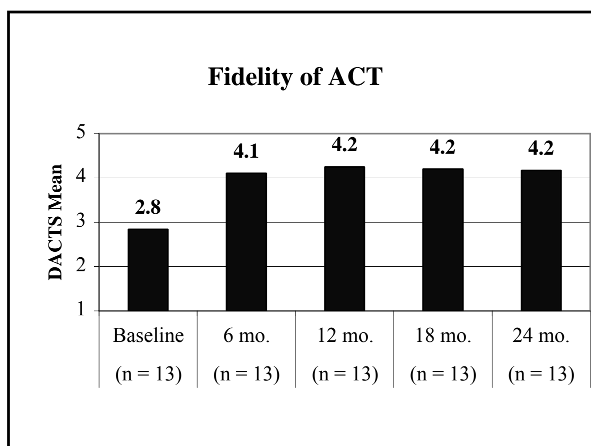
National EBP Project: 2-Year Rates of Successful Program Implementation

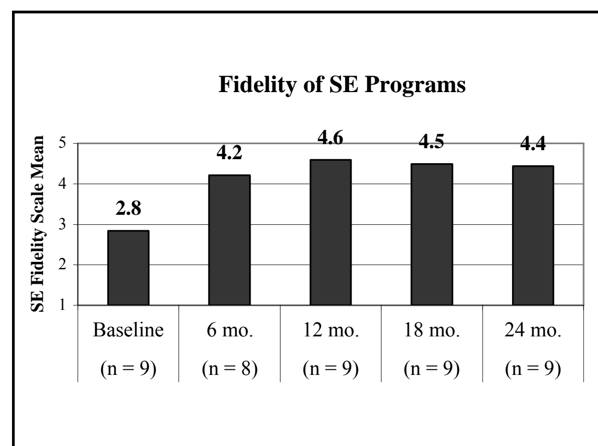
	Successful (Fidelity >4)	Unsuccessful	Dropped Out
ACT	10 (77%)	3	
SE	8 (89%)	1	
IDDT	2 (15%)	9	2
IMR	6 (50%)	6	
FPE	3 (50%)	1	2
Total	29 (55%)	20	4







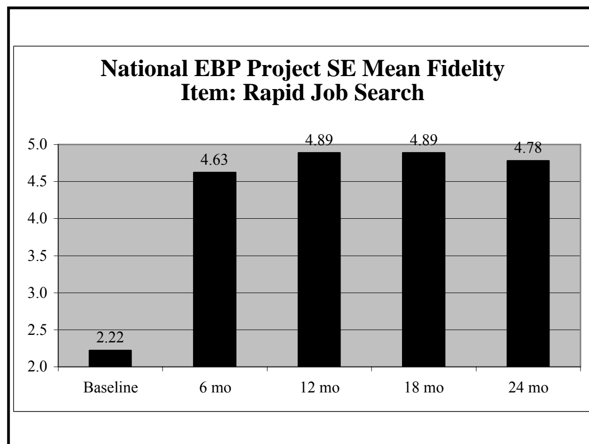




What Features of a Fidelity Scale Influence Achievement of High Fidelity?

Working Hypotheses

- Structural items often can be rapidly attained (if not too expensive)
- Clinical interventions are more variable in attainment
- Some fidelity items may be outside practitioner control? (e.g., involving significant other)



Scorecard: Properties of EBP Fidelity Scales

- Practical to use √
- Reliable √
- Comprehensive ?
- Face valid, easy to explain √
- Sensitive to change over time √
- Discriminate from usual practice √
- Predict outcomes associated with EBP +/? **(Varies by EBP)**