

Behavioral Health is Essential To Health



Prevention Works



Treatment is Effective



People Recover



Evidence Based Approaches to Systematic Fidelity Assessment for First Episode Programs

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First Episode Psychosis Services Fidelity Scale

Donald Addington

**Professor, Department of Psychiatry
University of Calgary**



Conflict of Interest

- Dr. Addington is one of the FEPS-FS developers
- No Pharmaceutical Company conflicts

Co-Investigators

- Emily McKenzie, U of Calgary
- Jianli Wang, University of Calgary
- Ross Norman, U of Western Ontario
- Tamara Sale, Portland State U
- Ryan Melton, Portland State U
- Gary Bond, Dartmouth Medical School

Program Fidelity

- The degree of implementation of an evidence-based practice (EBP)

Bond GR et al *Mental Health Services Research* 2000;2:75-87

Fidelity Scale

- A scale that measures fidelity.
- Provides a list of objective criteria by which a program or intervention is judged to adhere to a reference standard for the intervention.

Bond GR et al *Mental Health Services Research* 2000;2:75-87

Fidelity Scale: Applications

Research

- Define services in both arms of an RCT or other research project
- Validate the scale and components through prospective longitudinal studies
- Outcome measure for implementation studies

Clinical Practice

- Service implementation
- Quality control
- Define fundable services
- Accreditation

FEPS-FS development: Objectives

- Develop a fidelity scale for first episode psychosis services which
 - Includes essential evidence based components
 - Is appropriate for all first episode psychosis services
 - Is not model specific
 - Is reliable
 - Is valid

FEPS-FS Development: Methods

- ✓ Systematic review of FEP peer review and grey literature
- ✓ Identification of service components
- ✓ Rate level of evidence for components
- ✓ International expert consensus process
- ✓ Systematic review of team based components
- ✓ Developed measures of components
- ✓ Pilot study of feasibility and reliability
- ✓ Comparison with 3 other fidelity measures

Search Strategy and Results

Steps	Details
1	Original search conducted Mar/Apr'10 Medline (M), PsycINFO (P), EMBASE (E) (<i>Jan 1980 – April Week 1, 2010</i>) Search terms: early psychosis or early schizo* or early psychotic episode or first psychotic episode
2	<ul style="list-style-type: none"> • 6,792 results (Medline) • 1,113 PsycINFO • + 5,334 EMBASE <p>= 13,239 citations</p> <p>Combine above search terms with: fidelity or program development or evaluation or impact or intervention or early intervention or program effect*</p>
3	<ul style="list-style-type: none"> • 312 results (Medline) • 247 PsycINFO • + 461 EMBASE <p>= 1,020 citations</p> <p>Review 1,020 abstracts for relevance</p> <p>Exclude n= 780</p> <p>Inclusion of 280 peer-reviewed publications</p>
4	<p>Search grey literature for worldwide FEP programs; reports on standards or guidelines</p> <p>Inclusion of 38 reports/sites identified in grey literature</p>

From Review to Components

- **280 Peer reviewed papers**
 - *Rated for quality*
 - *Components identifies by two independent raters*
 - *Components compared and consensus achieved*
- **75 Components**
 - *Components rated for level of evidence*

Delphi Process

A systematic consensus building process that obtains and quantifies the opinions of a group of experts



Fink A et al. Am J Public Health 1984:979-983

Experts

- Purposive sampling
- Authored peer reviewed paper between 2005 - 2010
- Individual search terms: health services research, early psychosis, first episode psychosis, clinical research
- All identified authors invited
- 31 agreed
- 28 completed round 1
- 24 completed round 2

32 Essential Components of First Episode Psychosis Services



- ***Public education***
- ***Gatekeeper education***
- ***Easy access***
- **Pharmacotherapy**
- **Case management**
- **Family education & support**
- **Integrated addictions**
- **Patient education**
- **Supported employment**

Addington D *Psychiatric Services* 2013 Aug 1;64(8):796-9

From Components to Fidelity Items

- Additional systematic review of literature on team based services for mental health services
 - *Identified team based components that were poorly described in FEPS research literature*
- Iterative process with team to
 - *Operationalize components*
 - *Quantify the rating of each component*

FEPS-FS domains and items

Domain	Number of Items
Access	3
Assessment/ Monitoring	5
Pharmacotherapy	5
Psychosocial therapies	8
Team composition and function	10

Psychosocial Item

Component	1	2	3	4	5
12. Family Education and Support Provision of individual or group family education and support covering a structured curriculum. At least 8 sessions delivered by an appropriately trained clinician	0-19% families receive at least 8 sessions of family education & support over 1 year	20-39% families receive at least 8 sessions of family education & support over 1 year	40-59% families receive at least 8 sessions of family education & support over 1 year	60-79% families receive at least 8 sessions of family education & support over 1 year	80+% families receive at least 8 sessions of family education & support over 1 year

Medication Item

Component	1	2	3	4	5
8. Antipsychotic Selection based on low EPS and low weight gain potential. * Includes: Aripiprazole, Ziprasidone, Lurasidone	0-19% patients receive antipsychot ic with low EPS and low weight gain potential	20-39 % patients receive antipsychot ic with low EPS and low weight gain potential	40-59% patients receive antipsychoti c with low EPS and low weight gain potential	60-79% patients receive antipsychoti c with low EPS and low weight gain potential	80+% patients receive antipsychoti c with low EPS and low weight gain potential

Team Item

Component	1	2	3	4	5
28. Weekly Multi-Disciplinary Team Meetings: All team members attend weekly meetings with focus on: 1. Case review (admissions & discharges); 2. Assessment and treatment planning; 3. Discussion of complex cases; & 4. Termination of services	No team meetings held	Monthly team meetings	Team meetings held more often than once a month, but less often than every two weeks	Bi-weekly team meetings	Weekly team meetings

Review Manual

- *A definition and rationale* for each component in the fidelity scale
- *A list of data sources* appropriate for each component
- *Decision rules* that will help score each component correctly. As you collect information from various sources, the rules will help you determine the specific rating to give for each component
- *Probe questions* that will help you gather information needed to rate the component

Fidelity Scale Tools

- First Episode Psychosis Services Fidelity Scale: (FEPS-FS 1.0) ©
- First Episode Psychosis Services Fidelity Scale: Individual Patient Version (FEPS-FS-I 1.0) ©
- First Episode Psychosis Services Fidelity Scale Fidelity Review Manual

Pilot study

- **Objectives**
 - *Train raters*
 - *Broaden application of criteria and ratings*
 - *Refine rating manual*
 - *Test feasibility of broad application*
 - *Test face validity*
 - *Test for inter rater reliability*
 - *Set quality criteria*

Pilot Study: Methods

- Review of criteria with videos and rating of one program
- Site visits to 6 program including
 - *Four united states program EASA*
 - *Two Canadian programs EPION*
- Modification of elements, descriptors and ratings
- Test of inter rater reliability
- Discrimination between high and low fidelity programs

Pilot Study: Methods

- Site Visits
 - *Review policies, procedures*
 - *Review administrative data*
 - *Review public and client education materials*
 - *Interview managers and clinicians*
 - *Observe team meeting*
 - *Meet with consumers and family group*
 - *Review 10 charts*

Pilot Study: Results

- **Fidelity items modified:**
 - *2 dropped 2 added*
 - *Descriptors made more generic and non country specific*
- **Manual revised:**
 - *More comprehensible in both US and Canada*
 - *Broadened concept of sessions;*
 - Delivered across providers in team
 - Purpose focused rather than brand focused

Pilot Study: Results

- Inter Rater Reliability
 - 3 raters 4 centres
 - Intraclass correlation coefficient
 - 0.932 (95% CI: 0.908, 0.950)
 - Inter rater reliability rated as very good

Pilot Study: Results

- **Quality Standard: 3 raters 4 centres**
 - *Programs considered to meet standards*
 - Mean score **86%** of total score
 - *Programs considered to not meet standards*
 - Mean score **70%** of total score
- **80%** of total score or 4/5 average item score recommended as good quality.

Pilot Study: Conclusions

- **FEPS-FS**
 - *Works across a variety of programs*
 - *Reliable*
 - *Has face validity*
 - *Has suggested quality standard*
 - *Has discriminative validity*

Published First Episode Psychosis Fidelity Scales

- **United States**
 - *Early Assessment and Support Alliance (EASA)*
 - *Recovery After Initial Schizophrenia Episode Connection (RAISE-C)*
- **United Kingdom**
 - *Evaluating the Development and Impact of Early Intervention Services in the West Midlands (EDEN)*
- **International**
 - *First Episode Psychosis Services Fidelity Scale (FEPS-FS)*

Four Scales Compared on

- Content
- Developmental Process
- Rating scale structure
- Process for assessing Fidelity
- Quality Standard

Comparison of Four Fidelity Scales

	FEP-FS	EASA	RAISE-C	EDEN
Number of Items	32	97	41	64
Shared by all	17	17	17	17
Percent common items	53	17	41	27
Shared with FEPS-FS %	100	25	54	39
Shared with EASA %	75	100	50	43
Shared with RAISE %	72	22	100	22
Shared with EDEN	78	43	22	100

FEPS-FS has highest proportion of items common to all measures

FEPS-FS has highest proportion of items shared with other measures

Four Scale Comparisons: Summary

- Content shows significant overlap across scales
- Development processes vary
 - Systematic review and international expert consensus FEPS-FS
 - Expert clinical opinion, EDEN
 - Operationalize program content RAISE-C
 - Expert committees and opinion EASA
- Rating
 - Dimensional rating EDEN, EASA FEPS-FC
 - Categorical rating RAISE-C

Comparison Study: Conclusions

- Core set of 17 items common to all measures
- FEPS-FS shares highest proportion of items
 - *54% of FEPS-FS comprise the 17 common items*
 - *75% FEP-FS items common to other scales*
- FEPS-FS only one based on systematic reviews
- FEPS-FS 80% of total score suggested quality threshold

Four Scale Comparisons: Summary

- Assessment process
 - Site review and multiple sources EASA, FEPS-FS
 - Administrative data bases RAISE-C
 - Manager self report EDEN
- Quality criteria
 - 80 % total score EASA, FEPS-FS
 - Not specified EDEN. Raise-C

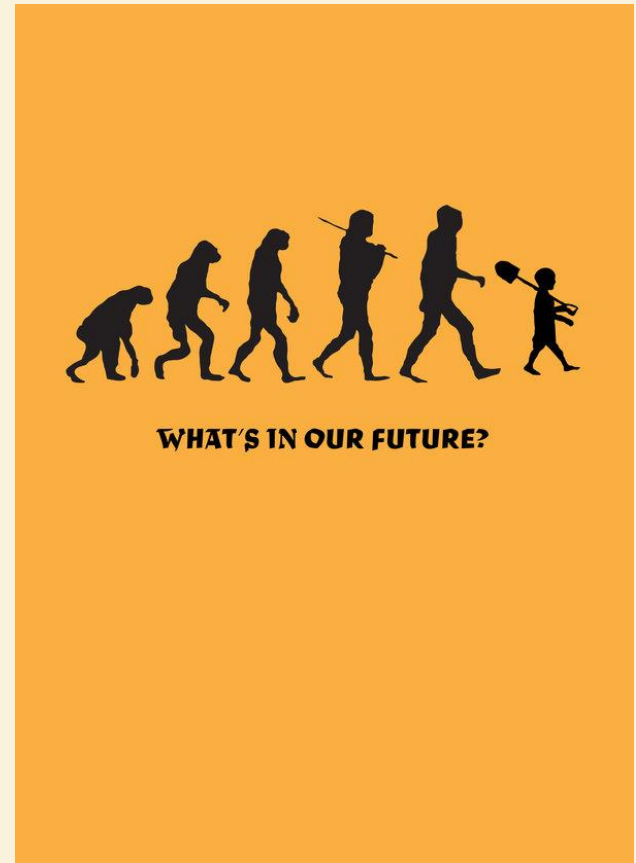
Conclusions: FEPS-FS

- ✓ Evidence-based components
- ✓ International consensus
- ✓ Works across program models
- ✓ Highest proportion of shared items
- ✓ Reliable
- ✓ Face validity
- ✓ Discriminative validity
- ✓ Rating manual
- ✓ Training available



Future Development: FEPS-FS

- Publication and dissemination
- International testing and application
- Predictive validity
- Active comparisons



Conclusions: Fidelity Assessment

- Supports implementation
- Supports quality and outcome agenda
- Links well with core performance measures
- Opportunity for linking implementation and further research





For additional questions

Donald Addington

Professor, Department of Psychiatry

University of Calgary

1403 29th Street NW

Calgary, AB, T2N 2T9, Canada

T. 403-944-2637



Comments on FEPS Fidelity Scale

Gary R. Bond

Dartmouth Psychiatric Research Center



Applications of Fidelity Scales

- ***Research:*** Fidelity measurement is essential to building a cumulative science
- ***Clinical:*** Fidelity reviews (fidelity assessments with feedback) are powerful tools for quality improvement

Key Role of Fidelity Scales in Building a Cumulative Science

- Impossible to evaluate outcomes in studies lacking fidelity measures
- Impossible to compare across studies lacking shared fidelity measures
- These gaps evident in the area of first episode research

Key Role of Fidelity Scales in Implementing EBPs

- Give federal agencies and state leaders templates to disseminate evidence-based practice (EBPs)
- Provide a roadmap for new programs starting out
- Are the most powerful tools we have for quality improvement

Fidelity Scales:

Some Major Scientific Challenges

- Many fidelity scales never used after initial study
- Most scales haven't established predictive validity
- Weighting of items: Should some items be given more weight?
- Calibration issue: Few have empirical benchmarks for high fidelity

Fidelity Scales:

Some Major Practical Challenges

- Fidelity assessment is labor intensive:
How do we monitor fidelity in the real world?
- What are optimal strategies for assessing fidelity (e.g., # items, frequency of assessment)
- How do we efficiently measure clinical interventions?

A Success Story: IPS Fidelity Scale

- Individual Placement and Support (IPS) supported employment is recognized as an EBP
- IPS has a standardized fidelity scale accepted by both the research and practice communities
(Bond et al., 1997, Becker et al., 2011)

Adoption of IPS Fidelity Scale

- Has been used in over 20 randomized controlled trials
- Routinely used to monitor quality in over 150 programs in 18-state learning collaborative and worldwide
- No competing fidelity scales for measuring supported employment

Validation of IPS Fidelity Scale

- Distinguishes between treatment conditions in randomized controlled trials
- Sensitive to change over time (McHugo et al., 2007)
- Predictive validity of IPS fidelity scale documented in 11 studies (Bond et al., 2011; 2012)

IPS Fidelity Predicts Outcome

IPS Fidelity Category	N (%)	Mean Competitive Employment Rate (Quarterly index)
Exemplary Fidelity	7 (9%)	44%
Good Fidelity	45 (57%)	39%
Fair Fidelity	23 (29%)	32%
Not Supported Employment	4 (5%)	29%

(Bond et al., 2012)

Specific Challenges for the FEPS-FS

- Will it be adopted widely? Many competitors
- Too many items? Will scope of scale make it hard for program leaders to focus on what needs changing?
- As a synthesis of EBPs, it measures complex areas with single items
- *Example: Single item for IPS*

8 Follow-up Studies of Early Intervention Programs Providing IPS Supported Employment

Condition	N	% Competitively Employed	% Education Enrollments
IPS	709	49%	27%
Control	165	29%	33%
Effect Size		0.41	-0.13
Significance		$X^2(1) = 21.6,$ $p < .0001$	$X^2(1) = 2.3,$ n.s.

Conclusions:

What is Significance of FEPS-FS?

- Extraordinary accomplishment:
Scale constructed using scientific process of identifying key evidence-based components
- Very few fidelity scales have this foundation
- FEPS-FS fills critical gap impeding scientific study of FEP

Conclusions:

What is the Future for the FEPS-FS?

- Further advances will depend on acceptance and adoption – at least partly a political issue
- Adoption will also depend on practical issues
 - Some barriers are common to fidelity scales in general
 - Some specific to FEPS-FS

Questions?