

Fidelity measurements in the real world:

Feasibility of BECCI and MITI for Motivational Interviewing in Child and Youth Mental Health

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Translation for Child and Youth

Mental Health



SickKids[®]

Acknowledgements

Provider Organizations

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1 Context/Background

2 Research Objectives

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Context/Background: FIDELITY

Fidelity:

the extent to which evidence-based treatments are implemented in practice as intended by the treatment developers

(Perepletchikova & Kazdin, 2005; Vermilyea, Barlow, & O'Brien, 1984; Yeaton & Sechrest, 1981)

- Has been identified as a **potential moderator** of the relationship/association between an intervention and its intended outcome *(Carroll, Patterson, Wood, Booth, Rick, & Balain, 2007)*
- Measurement of fidelity is crucial to **understanding intervention effects** over the short and long-term.



Our Study (1)

- Informed by the NIRN (*Fixsen et al, 2005*) and CFIR (*Damschroder et al., 2009*) implementation models, we implemented Motivational Interviewing (MI) (*Miller & Rollnick, 2002*) in four child and youth mental health provider organisations in Ontario, Canada
- Across the 4 organizations, we recruited 24 clinicians to undergo our implementation intervention.



Our Study (2)

Implementation Approach:

- Provided MI Treatment Manual (*Miller & Rollnick, 2002*)
- Two full days of MI training (one in October 2011, and one in November 2011).
- Once-monthly coaching sessions via telephone with MI expert for seven months.

Fidelity Checks:

- three audiotapes prior to implementation (July-Sept. 2011)
- one audiotape per month following training and during coaching (Dec 2011-June 2012)
- three audiotapes post-coaching (July-Sept. 2012)



Fidelity Research Objectives

- 1) To identify the extent to which the **Behaviour Change Counselling Index (BECCI)** Fidelity Scores agree with those provided by the **Motivational Interviewing Treatment Integrity System (MITI)** (gold-standard).
- 2) To identify the costs/feasibility issues associated with implementing the BECCI and MITI fidelity checking systems.
- 3) *Given measure agreement, to identify to what extent clinicians demonstrate a response to MI training and coaching on the BECCI measure and demonstrate an increase in BECCI scores over time.*



Fidelity Measures: The MITI (v.3.1.1)

Moyers, Martin, Manuel, Miller & Ernst, 2010

MI Spirit =
Avg. of Evocation,
Collaboration,
Autonomy/Support

Available through
The University of
New Mexico

<http://casaa.unm.edu/codinginst.html>

- Motivational interviewing is a client-centered counseling style where the examination and resolution of ambivalence is its central purpose.

Tape # _____ Coder: _____ Date: _____

Global Ratings

Evocation		1 Low	2	3	4	5 High
Collaboration		1 Low	2	3	4	5 High
Autonomy/ Support		1 Low	2	3	4	5 High
Direction		1 Low	2	3	4	5 High
Empathy		1 Low	2	3	4	5 High

Behavior Counts

Giving Information			
MI Adherent	Asking permission, affirm, emphasize control, support.		
MI Non-adherent	Advise, confront, direct.		
Question (subclassify)	Closed Question		
	Open Question		
Reflect (subclassify)	Simple		
	Complex		
	TOTAL REFLECTIONS:		

First sentence: _____

Last sentence: _____

Fidelity Measures: The BECCI

Lane, Huws-Thomas, Hood, Rollnick, Edwards, Robling, 2005

Available through

www.motivationalinterview.net

- Developed to assess fidelity to Behavior Change Counseling
- BCC is informed by the principles of MI
- **More modest goals of helping the client to talk about change and the how and why of change.**
- **Four domains: agenda setting and permission seeking, the how and why of change, taling about targets of change and the consultation.**

Behaviour Change Counselling Index (BECCI)

BECCI is an instrument designed for trainers to score practitioners' use of Behaviour Change Counselling in consultations (either real or simulated). To use BECCI, circle a number on the scale attached to each item to indicate the degree to which the patient/practitioner has carried out the action described. Before using BECCI, please consult the accompanying manual for a detailed explanation of how to score the items. As a guide while using the instrument, each number on the scale indicates that the action was carried out:

0. Not at all
1. Minimally
2. To some extent
3. A good deal
4. A great extent

Tape Number: (sssss_ddmmyyyy) _____

Segment: _____ minutes to _____ minutes

The Topic: _____

Total Score: 4.0 / 4

ITEM	Scale					
	Not at all	Minimally	To some extent	A good deal	A great extent	
1. Practitioner invites the patient to talk about behaviour change	<input type="radio"/> N/A	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input checked="" type="radio"/> 4
2. Practitioner demonstrates sensitivity to talking about other issues		<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input checked="" type="radio"/> 4
3. Practitioner encourages patient to talk about current behaviour or status quo		<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input checked="" type="radio"/> 4
4. Practitioner encourages patient to talk about change		<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input checked="" type="radio"/> 4
5. Practitioner asks questions to elicit how patient thinks and feels about the topic		<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input checked="" type="radio"/> 4
6. Practitioner uses empathic listening statements when the patient talks about the topic		<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input checked="" type="radio"/> 4
7. Practitioner uses summaries to bring together what the patient says about the topic		<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input checked="" type="radio"/> 4
8. Practitioner acknowledges challenges about behaviour change that the patient faces		<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input checked="" type="radio"/> 4
9. When practitioner provides information, it is sensitive to patient concerns and understanding	<input type="radio"/> N/A	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input checked="" type="radio"/> 4
10. Practitioner actively conveys respect for patient choice about behaviour change		<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input checked="" type="radio"/> 4
11. Practitioner and patient <i>exchange</i> ideas about <i>how</i> the patient could change current behaviour (if applicable)	<input type="radio"/> N/A	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input checked="" type="radio"/> 4
Practitioner speaks for (approximately):						
	<input type="radio"/> More than half the time	<input type="radio"/> About half the time	<input type="radio"/> Less than half the time	<input checked="" type="radio"/> No response		

Methods



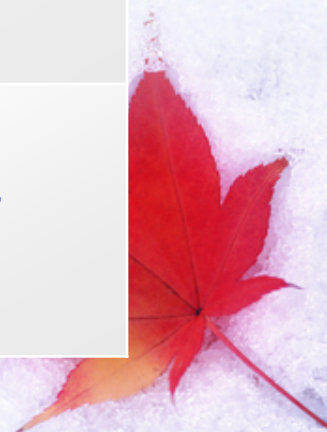
Objective 1: Agreement between BECCI and MITI

- Parameters of interest:
 - MITI Spirit vs. BECCI Total Score.
 - MITI Empathy vs. BECCI Empathy.
 - Following the multi-method recommendation of Zaki, Bulgiba, Isma & Ismail (2012).
- Pearson Correlation coefficient
- Two-way random intra-class correlation coefficients (ICC)
- Paired t-tests
- Bland-Altman (1986) graphical agreement methods



Results Objective 1: MITI & BECCI Agreement

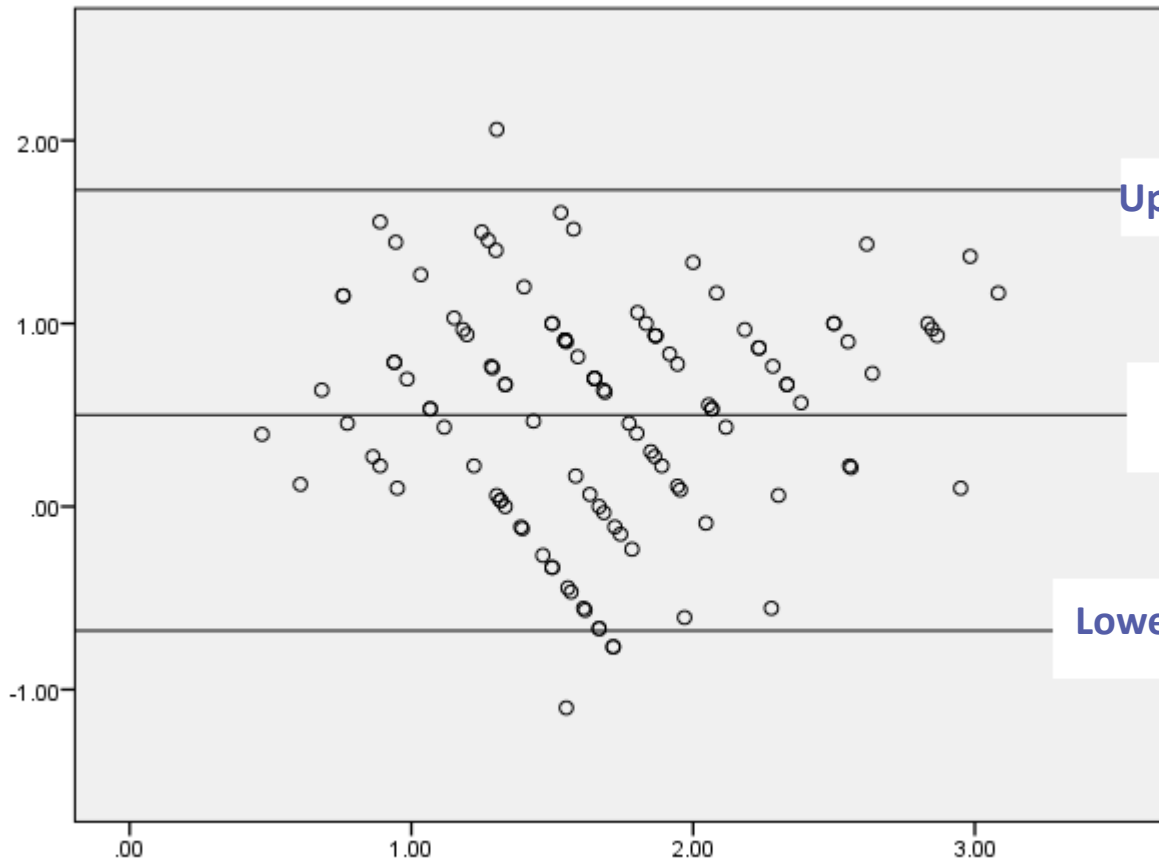
	MITI MI Spirit vs. BECCI Total Score	MITI Empathy vs. BECCI Empathy
Pearson Correlation Coefficient (r)	0.54 $p < .001$	0.48 $p < .001$
Intra-class Correlation Coefficient (ICC(Two-Way Random))	0.54 (95% _{CI} : 0.39 – 0.65) $p < .001$	0.47 (95% _{CI} : 0.31 – 0.60) $p < .001$
Paired T-Test	$t(114)=9.17,$ $p < .001$	$t(114)=-6.59,$ $p < .001$



Results Objective 1: MITI & BECCI Agreement

Bland-Altman Plot: MITI MI Spirit vs. BECCI Total Score

D
I
F
F
E
R
E
N
C
E

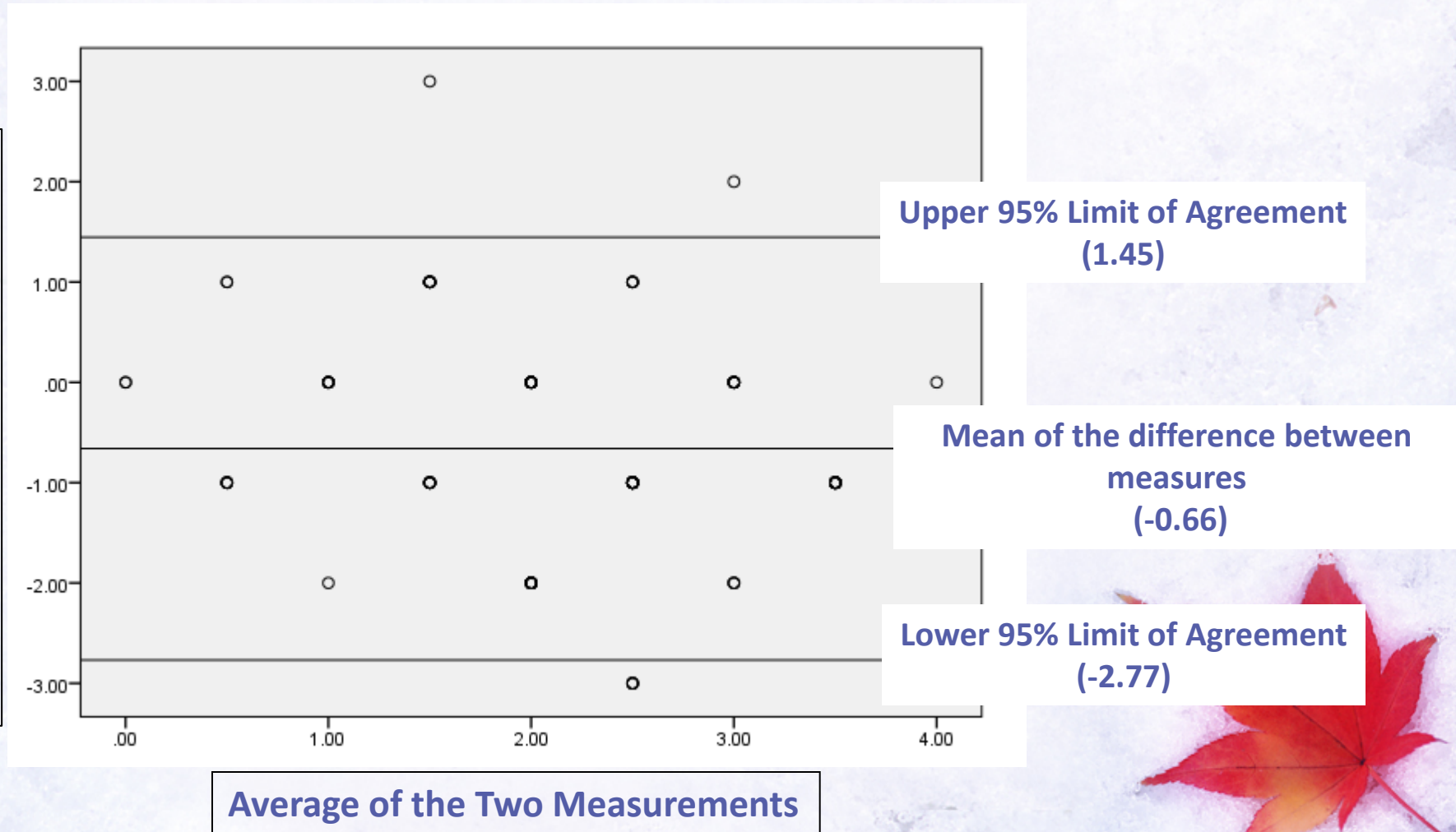


Average of the Two Measurements



Results—Objective 1: MITI & BECCI Agreement

Bland-Altman Plot: MITI Empathy vs. BECCI Empathy



Results Objective 1:

Do the MITI & BECCI Demonstrate Agreement?

	MITI MI Spirit vs. BECCI Total Score	MITI Empathy vs. BECCI Empathy
Pearson Correlation Coefficient (r)	✓	✓
Intra-class Correlation Coefficient (ICC(Two-Way Random))	✓	✓
Paired T-Test	✗	✗
Bland-Altman Plot	✓	✓



Methods



Objective 2: Feasibility

- Cost of measure, training, time-to-complete
- Clinician perceptions of fidelity process using focus group methods informed by interpretive description (Thorne, 2008).
- Transcription and analysis of Clinician Coaching Calls using the interpretive description methods (Thorne, 2008).



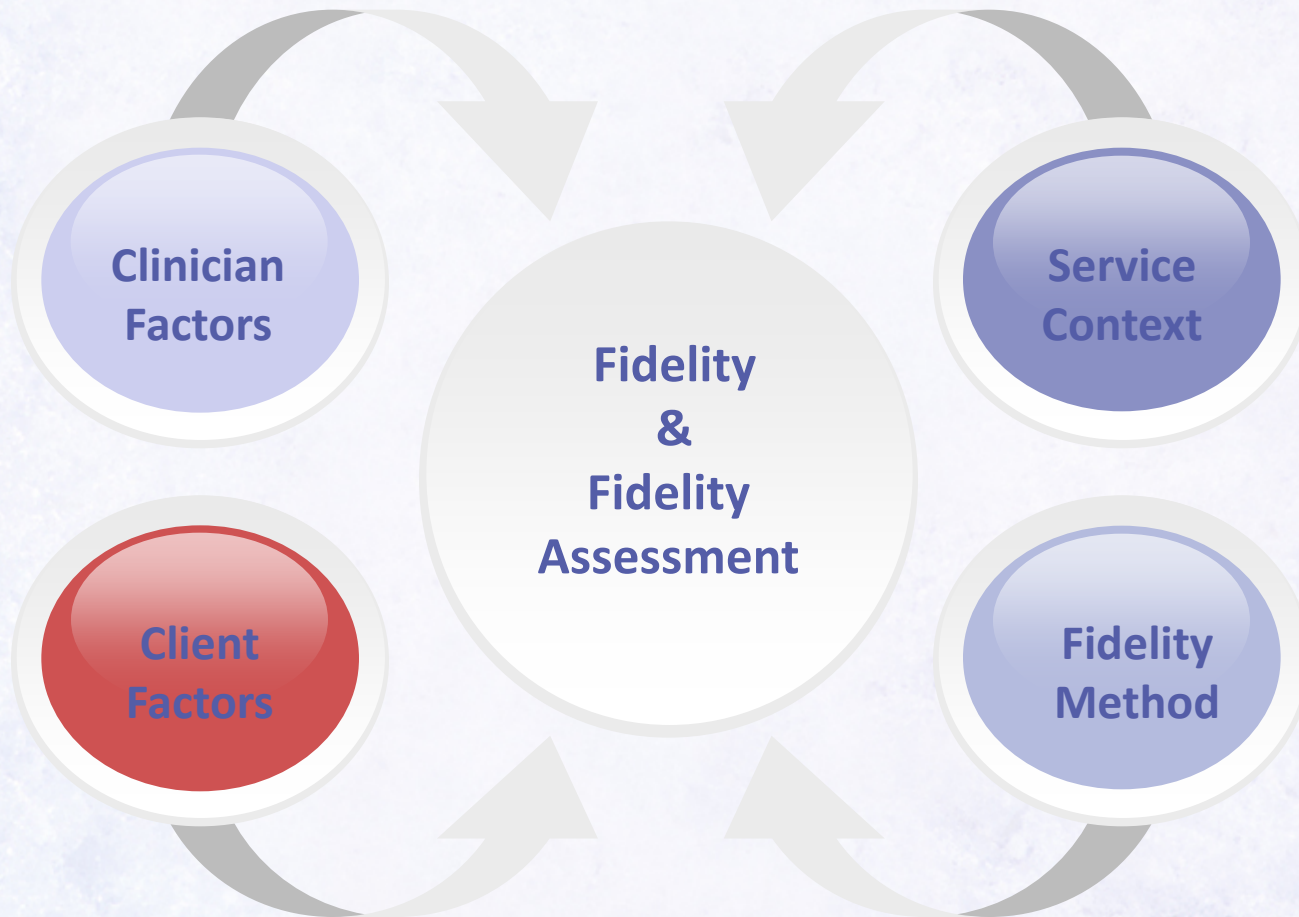
Results Objective 2: Feasibility of BECCI

	BECCI	MITI
Cost of Measure	Free	Free
Training Requirements	<ul style="list-style-type: none"> • MI-manual readings (157 pages) watch a training video, BECCI manual reading (8 pages) • 20 hours (including consensus meeting) 	<ul style="list-style-type: none"> • 2-3, six-hour training days over two months • 3-hour evening sessions and 3-hour booster sessions every three weeks • > 30 hours
Total time to code tape (20min random segment)	<ul style="list-style-type: none"> • 30 min to code and email score 	<ul style="list-style-type: none"> • 30 min to code. • 10-15 min to write up feedback
Total cost to code tape	<ul style="list-style-type: none"> • \$36.50/hour (graduate level salary) • \$ 18.25/tape 	<ul style="list-style-type: none"> • \$100/tape



Results—Objective 2: Feasibility of BECCI

Preliminary inductive interpretive description (Thorne, 2008) of coaching calls and clinician focus groups suggest:



Results—Objective 2: Feasibility of BECCI

Clinician Factors

“I found the feedback helpful as well. I did not realize until then how much direction I was giving to the client without checking back to the client to see if we were on the same page. Now I mentally review the session afterwards even if I do not tape it, just so I can reflect on the content and my behavior.”

Client Factors

“I did not do my tape this month because it was not a good month. It’s been difficult to get new clients rolling and people to accept being taped.”

Service Context

“The only barrier is trying to get the tapes out. Our work is so outreach based, in the car and on the fly, so taping has been a challenge. There’s lots of instability (sub-crisis) in the clients too, so what you plan for the talk might not work at all because the youth has suddenly been kicked out of the house and you have to deal with that.”

Fidelity Method

“I continue to find BECCI useful. I see that I got a 0 for practitioner acknowledging challenges ...number 8. Also, respect for patient choice. These are things that I need to practice and specifically make an effort for the next tape.”

The 'Take Home'

- BECCI and the MITI demonstrate minimal variation in the differences between the two assessment methods using Bland-Altman plots.
- The BECCI is substantially less costly with respect to training and implementation compared to the MITI fidelity method; and for this reason, is more practical for use in a clinical environment.
- Implications for research and practice:
 - Researchers need to design and/or test alternatives to the fidelity gold-standard.
 - Fidelity methods need to be adaptable, brief, and encouraged as a routine form of reflective clinical practice.



References

1. Bland, J.M., & Altman, D.G. (1986). Statistical methods for assessing agreement between two methods of clinical measurement. *Lancet*, 8 (1), 307-310.
2. Damschroder LJ, Aron DC, Keith RE, Kirsh SR, Alexander JA, Lowery JC. (2009). Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. *Implementation Science*, 2009 Aug 7;4:50. doi: 10.1186/1748-5908-4-50.
3. Fixsen, D. L., Naoom, S. F., Blase, K. A., Friedman, R. M. & Wallace, F. (2005). *Implementation Research: A Synthesis of the Literature*. Tampa, FL: University of South Florida, Louis de la Parte Florida Mental Health Institute, The National Implementation Research Network (FMHI Publication #231)
4. Miller, W. & Rollnick, S. (2002). *Motivational Interviewing: Preparing People for Change* (2nd ed.). New York: Guilford Press.
5. Perepletchikova, F. & Kazdin, A.E. (2005). Treatment integrity and therapeutic change: Issues and research recommendations. *Clinical psychology: Science and practice*, 12 (4), 365-383.
6. Vermilyea, B.B., Barlow, D.H. & O'Brien, G.T. (1984). The importance of assessing treatment integrity: An example in the anxiety disorders. *Journal of behavioral assessment*, 6, 1-11.
7. Yeaton, W., & Sechrest, L. (1981). Critical dimensions in the choice and maintenance of successful treatments: Strength, integrity, and effectiveness. *Journal of consulting and clinical psychology*, 49, 156-167.
8. Zaki, R., Bulgiba, A., Ismail, R., & Ismail, N.A. (2012). Statistical methods used to test for agreement of medical instruments measuring continuous variables in method comparison studies: A systematic review. *PLoS One*, 7, (5), e37908.



For more information about this study and the
larger implementation study, contact:

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