

# The Wraparound Process

*An in-depth look at fidelity patterns from  
a national dataset*

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# Introduction

- John Burchard's Wraparound Fidelity Index (WFI-3) assesses adherence to principles of the wraparound process through interviews with caregivers, youths, and providers.
  - 11 Elements of Wraparound
  - 4 items per element
  - Responses scored by interviewer from 0 (low fidelity) to 2 (high fidelity)
- Requested by over 250 communities
- Used by at least 50 communities nationally

# Prior Research on WFI

- WFI Total scores and most element scores found to have good psychometric properties (e.g., internal consistency, test-retest reliability)
- WFI Total scores associated with external expert ratings of fidelity using more intensive method
- WFI Total scores discriminate different types of programs (e.g., wraparound vs. comparison)
- Emerging evidence for association between WFI scores and child and family outcomes

# Unanswered questions

*For communities using the WFI and researchers*

- What is the level of agreement between WFI respondents?
- What is the underlying structure of the WFI? What does it tell us about the way wraparound occurs in the “real world”?
- What constitutes a “good” (or “acceptable”) fidelity score?



# Today's presentation

- We will present results of analyses of a national WFI-3 dataset for 667 youth from 10 communities, focusing on:
  - 📄 Agreement between youths, caregivers, and facilitators,
  - 📄 How different hypothesized models for wraparound implementation fit with WFI-3 data (confirmatory factor analysis), and
  - 📄 What the national dataset and previously published evaluation studies using the WFI-3 tell us about setting standards for wraparound fidelity
- Implications for quality assurance, research, and model development

# Extending understanding of the WFI: Agreement between WFI respondents

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# Background: WFI Properties and Psychometrics

## ● What has been assessed:

- Test-retest reliability
- Internal consistency
- Concurrent validity
- Criterion-related validity

## ● What has not been assessed:

- Stability over time and typical trajectory of fidelity scores
- Inter-respondent agreement

# National WFI Sample

- N=667 families from 10 collaborating sites in 9 states
  - N=622 RF interviews
  - N=490 caregiver interviews
  - N=367 Youths
- Data collection method:
  - Sites received manual and training materials
  - Each site completed Memorandum of Agreement to administer WFI in full and to adhere to interview protocols
  - Majority of sites administered interviews by phone
    - 18% of RF, 14% of Caregiver, and 8% of Youth interviews conducted face-to-face



# National WFI study sample

Site	N families	N RF	N CG	N Youth
Indiana	49	44	39	23
Nebraska	366	339	226	212
Pennsylvania	18	17	14	12
Massachusetts	74	74	71	29
Minnesota 1	26	26	23	12
North Carolina	22	22	22	16
Missouri	34	34	32	27
Nevada	31	31	31	23
Florida	27	24	17	5
Minnesota 2	21	19	15	8
<b>Total Ns</b>	<b>667</b>	<b>622</b>	<b>490</b>	<b>367</b>

# Results: Agreement Between Respondents

- For all three respondents, a moderate correlation was found
  - ICC = .58
- For Individual respondents:
  - RF-CG = .44
  - CG-Y = .49
  - RF-Y = .45

# Findings and implications

- Moderate agreement found for WFI Total scores across all respondents
  - Higher than found in a meta-analysis of parent-mental health worker cross-informant scores for children (Achenbach, McConaughy, & Howell, 1987)
  - Consistent with agreement found in a meta-analysis of ratings of adults (Achenbach, Krukowski, Dumenci, & Ivanova, in press)
- Level of agreement provides evidence for reliability of WFI, but also suggests that individual respondent scores may differ meaningfully across individual respondents
  - Considering all respondents' scores individually will likely be important in considering fidelity levels

# Recipes for Wraparound: *Comparing wraparound models using confirmatory factor analysis*

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# Overview

- Wraparound developed as value-based model (e.g., community-based, family-focused)
- Service providers have struggled to translate philosophy into effective real-world practices
- Recent efforts provided more clearly specified models of wraparound
- Current study provides an empirical test for how well two wraparound models fit with ratings from caregivers on the WFI

# Outline

- Models of wraparound
- Method for comparing models
- Findings
- Conclusions
- Implications and future directions

# Wraparound Elements

1. Voice and choice
2. Team-based
3. Community-based
4. Cultural competence
5. Individualized and strengths-based
6. Natural supports
7. Continuation of care
8. Collaboration
9. Flexible resources and funding
10. Outcomes-based

(Burns, B. J., & Goldman, S. K., 1999).

# Necessary Conditions

1. Adherence to philosophical model

Team adheres to practice model while promoting team cohesiveness and high quality planning.

2. Collaboration

Regular attendance and participation by appropriate people.

3. Capacity building

Team members capably perform their roles on the team.

4. Acquiring services & supports

Team is aware of wide array of services, identifies/develops natural supports, and designs/tailors services to expressed needs.

5. Accountability

Team uses documentation for continuous improvement and accountability.

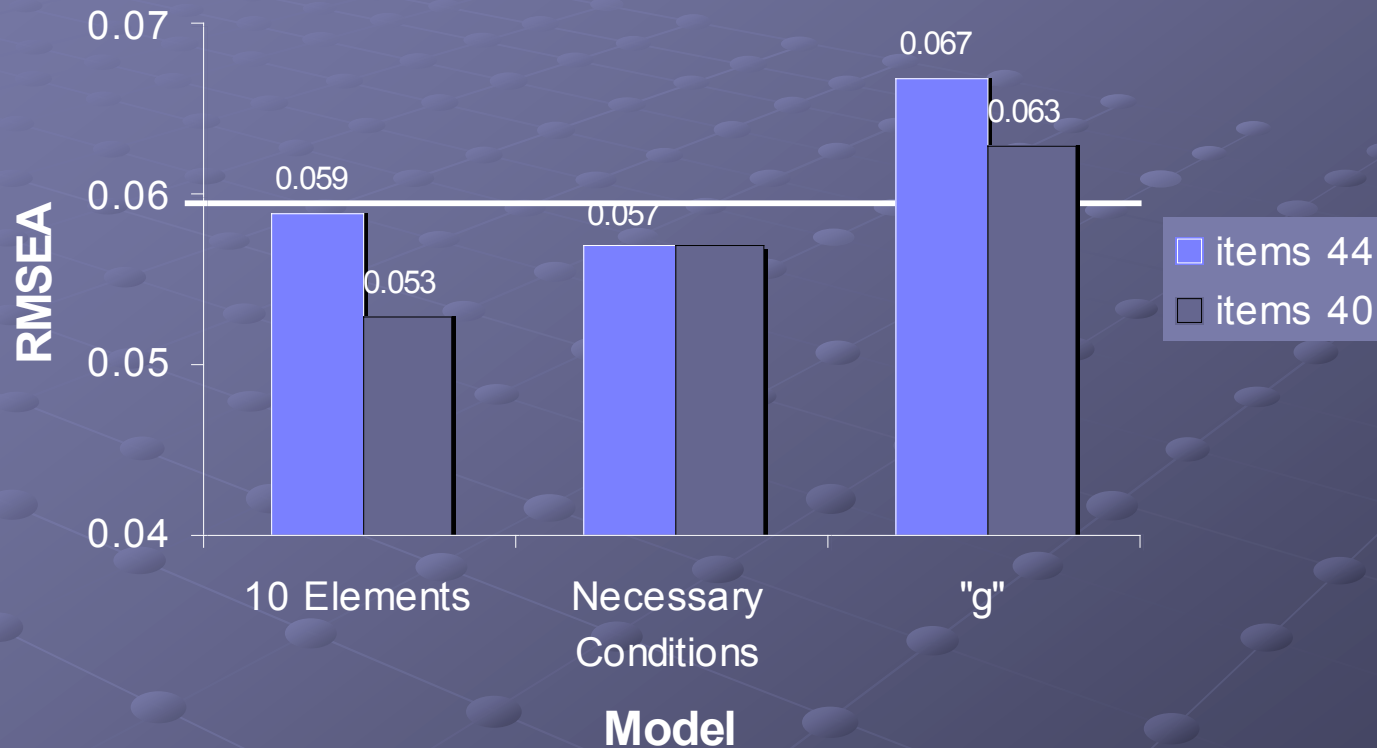
(Walker, J., Koroloff, N. & Schutte, K., 2003).



# Steps for Model Testing

- WFI-3 caregiver interviews (n = 444)
- Specify models
  - Each item assigned to only one factor
  - Factors allowed to correlate
- Item-level CFA using WLSMV estimation  
(Levent, 2004)
  - RMSEA of .06 or lower indicates good fit
  - Compare to one-factor model (parsimony test)

# Findings: Model Selection



*Cut-off for good model fit  $\leq .06$*

# Conclusions

## ● Take-home findings

- Both models showed adequate fit
- Both models better than one-factor
- Removing a poorly fitting element improved fit

## ● Potential limitations

- Selected sample
- WFI items designed for one model
- Caregiver only

# Implications for quality assurance and program development

- Results support presenting WFI fidelity data for individual elements
  - Such results can be used to support training, supervision, and program development
  - Results may be useful for assessing and addressing organizational and system conditions in a community



# Implications for research

- Results provide evidence for validity of the WFI and its underlying elements
  - Future research may illuminate how best to combine elements into subscales that possess adequate reliability (internal consistency)
- Results provide evidence for validity of the necessary supports model
  - Future research may investigate relationship between necessary conditions subscales constructed from WFI data and Portland State RTC system and organizational assessments

# Implications for NWI

- National Wraparound Initiative: supports consideration of value-based principles during process of
  - Further defining wraparound
  - Developing specific phases & activities
  - Creating implementation supports
  - Creating next generation of fidelity tools

# “Is it Wraparound Yet?”

## Bootstrapping wraparound fidelity standards using the WFI

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# Background

- Fidelity measurement is the “natural union of scientific and practical needs” (Salyers et al., 2003)
  - Assist in interpretation of study results, determine effective components of models
  - Help programs and trainers apply Quality Assurance activities
  - Help agencies or jurisdictions with policy, funding, certification decisions



# Fidelity benchmarks for wraparound?

- Wraparound model has been slow to become standardized
- No single model can probably yet be considered “evidence-based” by traditional treatment research standards
- Nonetheless, WFI items are based on core principles that are widely accepted (and recently refined)
- Both researchers and collaborating communities are interested in assistance in interpreting wraparound fidelity scores

# What methods can be used to determine fidelity standards?

## ● Norm-referenced

- Comparison to a large, representative sample

## ● Criterion-referenced

- *Self-referenced* = compare scores to your own scores over time
- *Content-referenced* = compare scores to an absolute criterion (e.g., “90% fidelity”)
- *Expectancy-referenced* = Prediction of performance based on external criteria
  - e.g., compare scores to a score shown to predict desired client outcomes

# Current approach

- Our ability to apply the described approaches is variable
- Our aim is to “bootstrap” the process through a combination of methods
  - **Study 1:** Norm-referenced study using our national WFI-3 dataset
  - **Study 2:** Criterion-referenced review of studies employing the WFI

# National WFI study sample

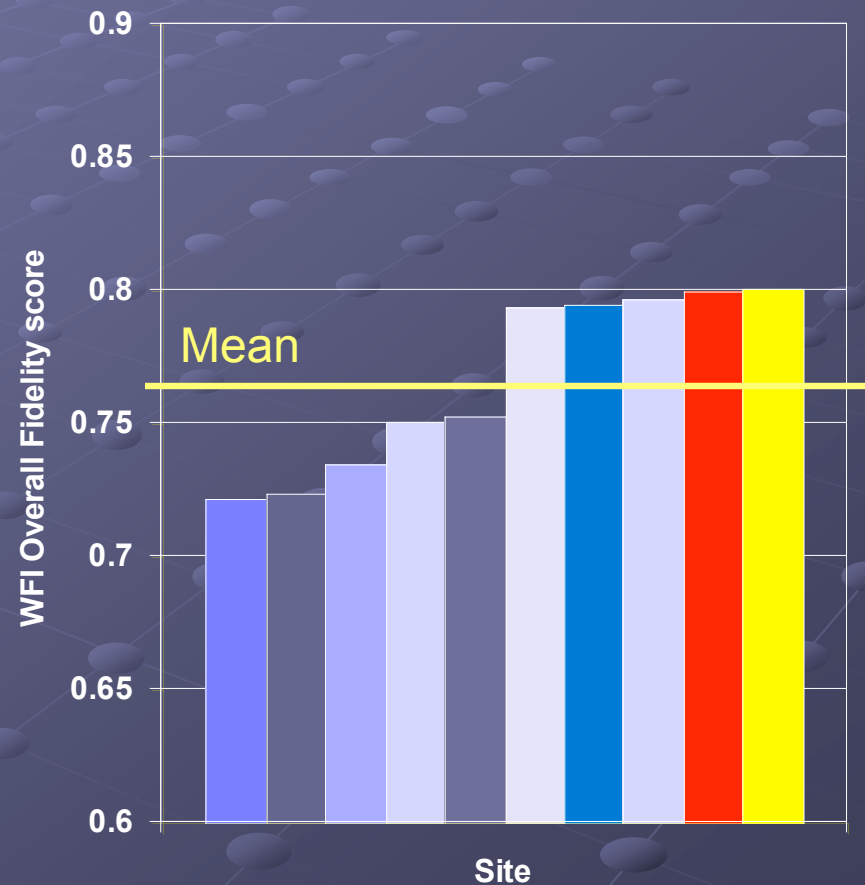
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# WFI Overall Fidelity Scores

Site (Rank)	mean	SD	Post-hoc
1	0.722	0.11	a
2	0.735	0.09	a
3	0.735	0.07	a
4	0.751	0.09	ab
5	0.753	0.12	ab
6	0.794	0.09	ab
7	0.795	0.10	ab
8	0.797	0.11	b
9	0.800	0.07	b
10	0.801	0.09	b

**Mean 0.767 0.02**

$F(9,656) = 5.951, p < .0001$



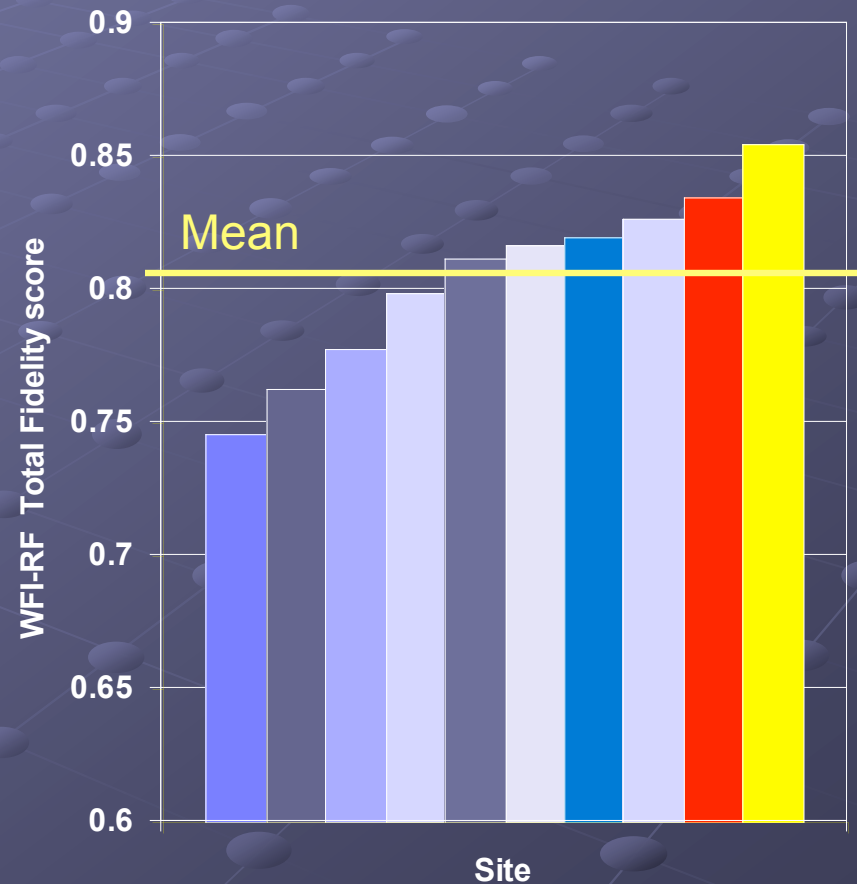


# Total WFI Results: Facilitators

Site (Rank)	RF mean	RF SD	Post-hoc
1	0.746	0.11	a
2	0.763	0.09	a
3	0.778	0.07	ab
4	0.799	0.09	ab
5	0.812	0.17	ab
6	0.817	0.08	b
7	0.820	0.10	ab
8	0.827	0.09	b
9	0.835	0.10	b
10	0.855	0.05	b

**Mean 0.805 0.03**

$F(9,612) = 7.452, p < .0001$

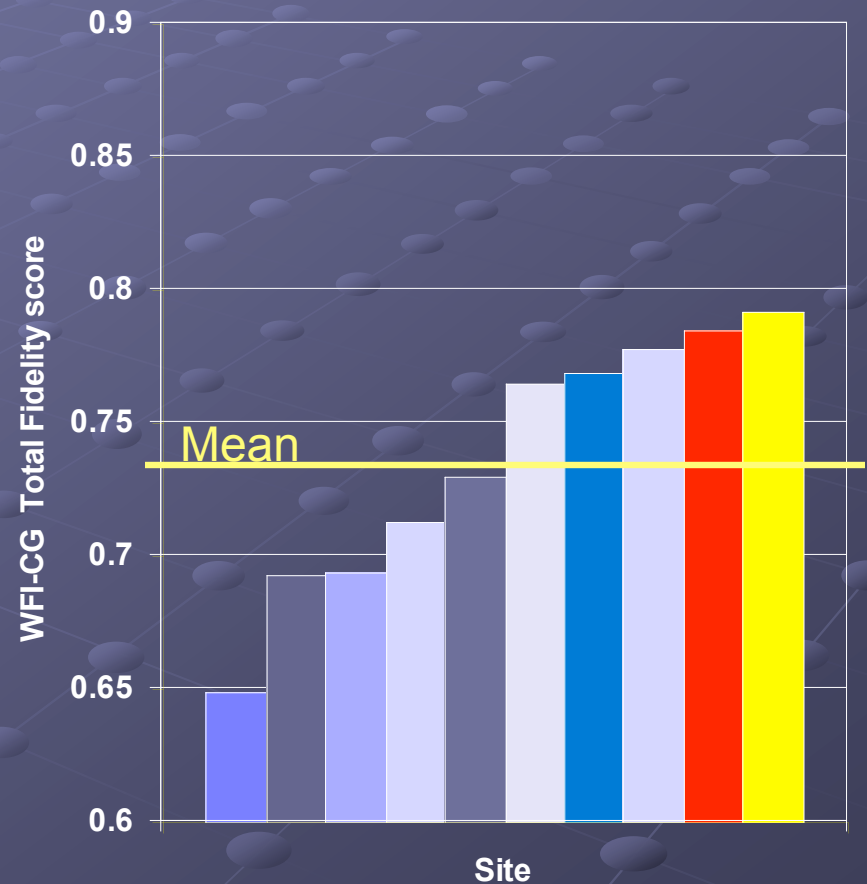


# Total WFI Results: Caregivers

Site (Rank)	CG mean	CG SD	Post-hoc
1	0.649	0.19	a
2	0.693	0.20	ab
3	0.694	0.14	ab
4	0.713	0.14	ab
5	0.730	0.10	ab
6	0.765	0.15	ab
7	0.769	0.13	ab
8	0.778	0.16	b
9	0.785	0.14	b
10	0.792	0.09	b

**Mean 0.737 0.04**

$F(9,480) = 3.195, p < .001$

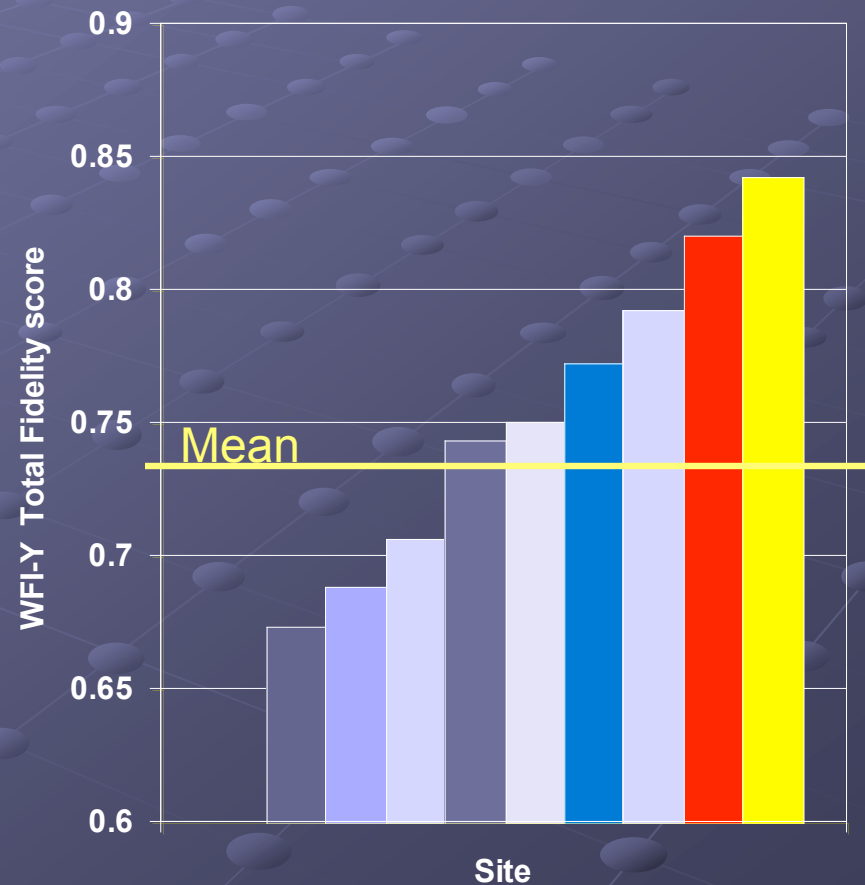


# Total WFI Results: Youth

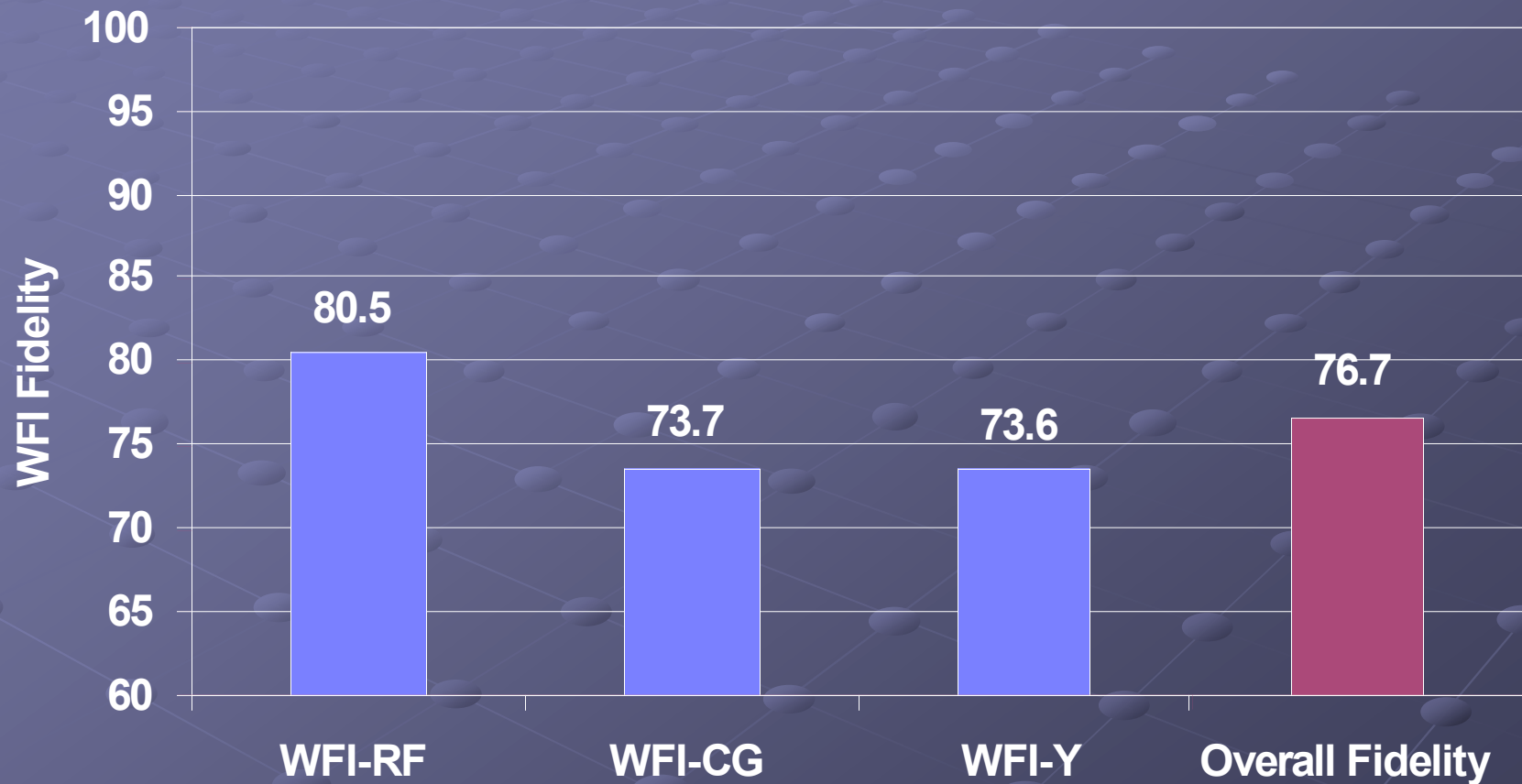
Site (Rank)	Y mean	Y SD	Post-hoc
1	0.565	0.17	a
2	0.674	0.15	ab
3	0.689	0.14	ab
4	0.707	0.14	ab
5	0.744	0.13	ab
6	0.751	0.14	ab
7	0.773	0.09	ab
8	0.793	0.12	b
9	0.821	0.14	b
10	0.843	0.04	b

**Mean 0.736 0.03**

$F(9,357) = 3.659, p < .0001$



# Summary: Mean WFI-3 site scores

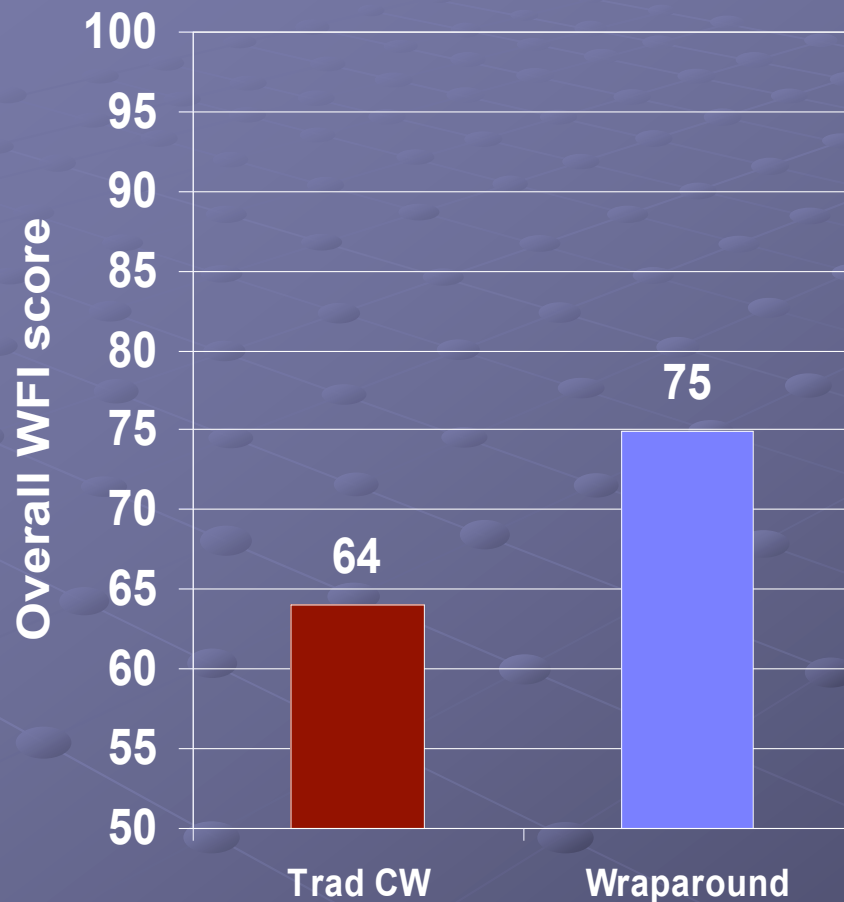


## Study 2: Criterion-referenced review

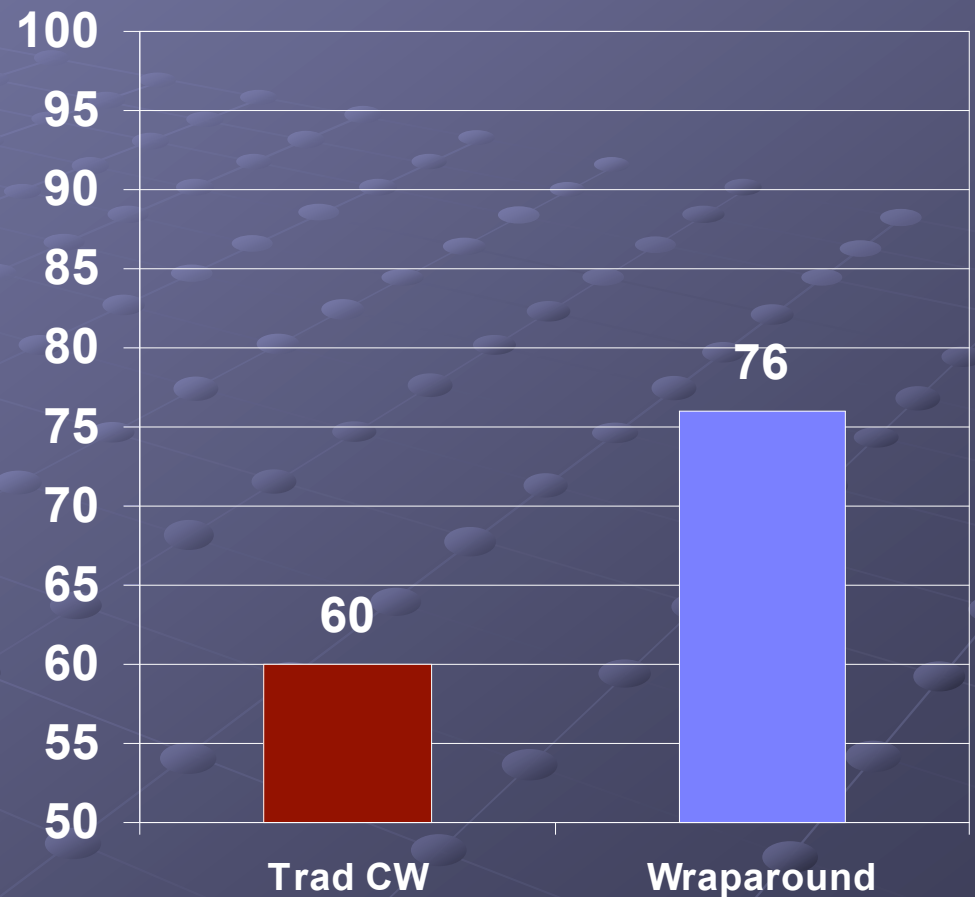
- Published, in press, or formally presented studies presenting WFI scores for independent samples that either:
  - 📁 Predict inclusion in a group or
  - 📄 Achievement of an external criterion
- Five studies found
  - Bruns, Leverentz-Brady et al., 2004
  - Ferguson, 2005
  - Peterson et al., 2004
  - Rast et al., 2004
  - Rast & VanDenBerg, 2004
  - (Bruns, Rast, Walker, Peterson, & Bosworth, in press)



# WFI scores predicting group membership

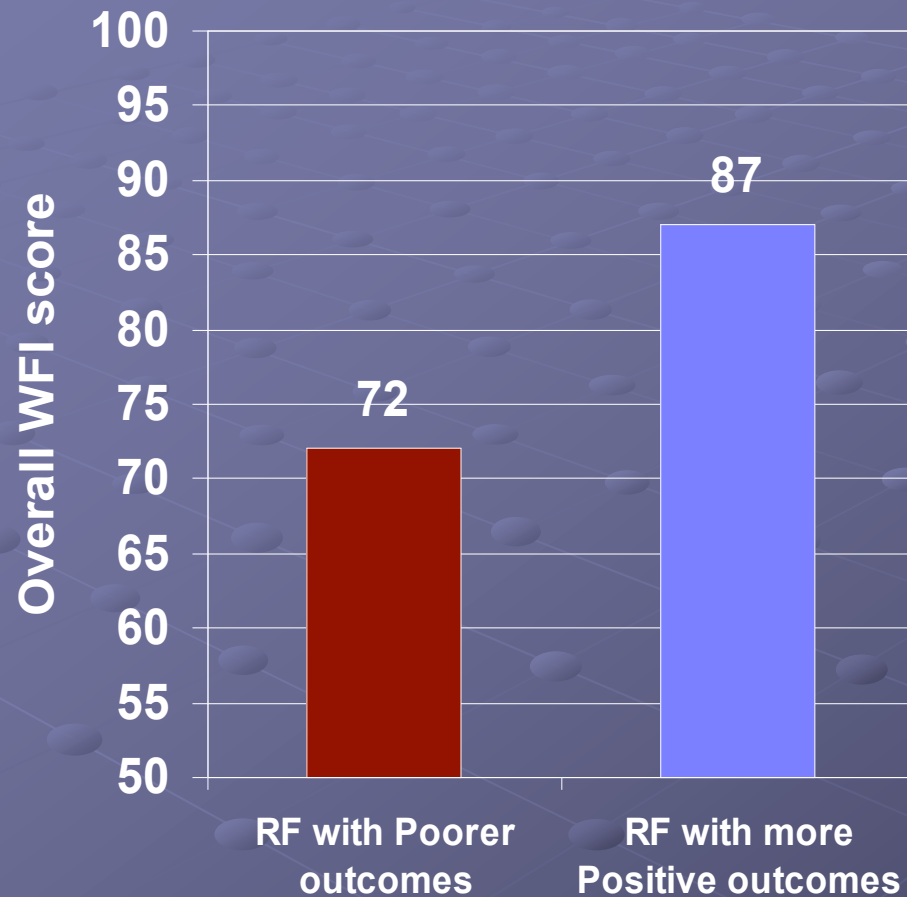


Ferguson et al (2004): Randomized trial of Wraparound in California

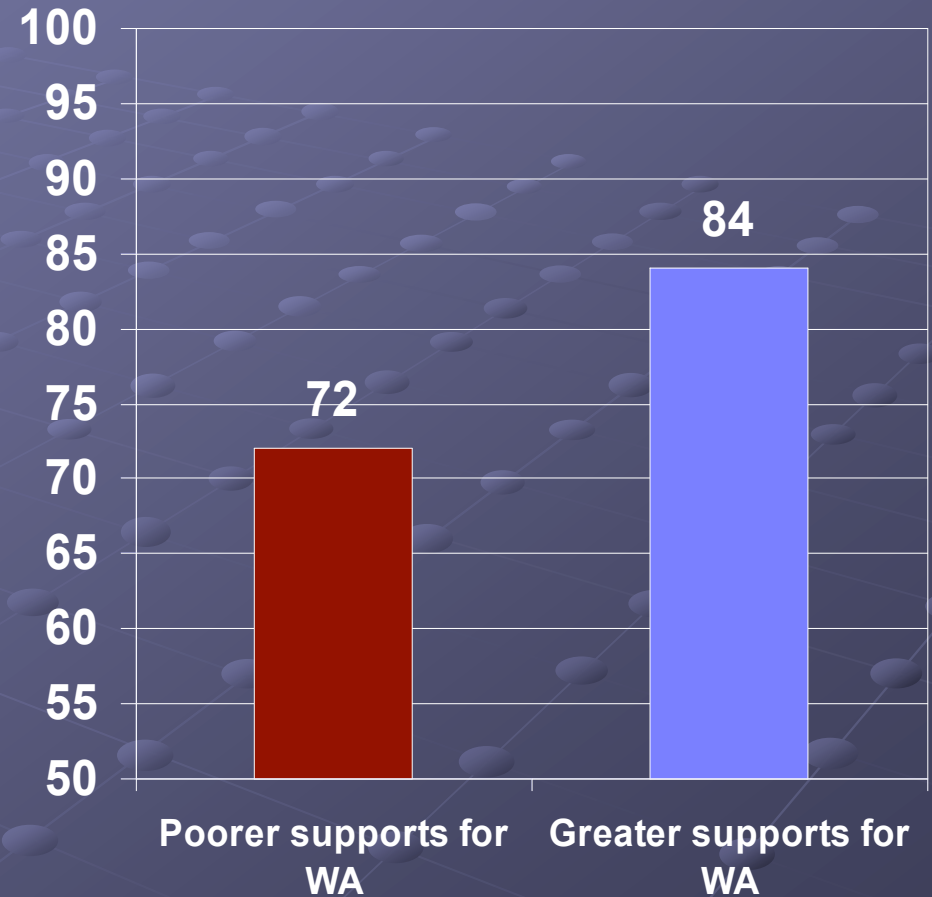


Peterson et al (2004): Matched comparison study of WA in Nevada

# WFI scores associated with external criterion

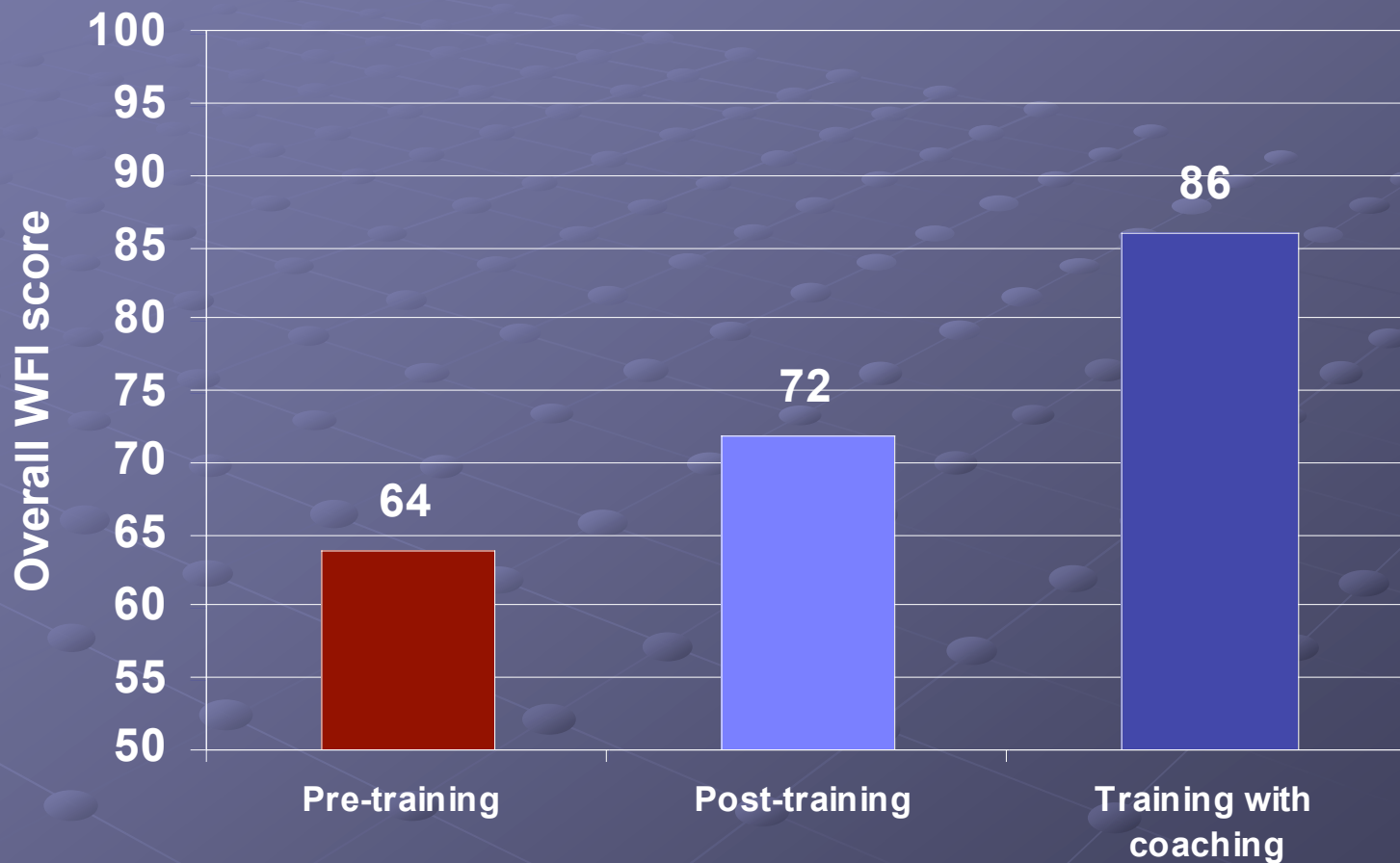


Rast et al (2004): Facilitator-level association between WFI and outcomes



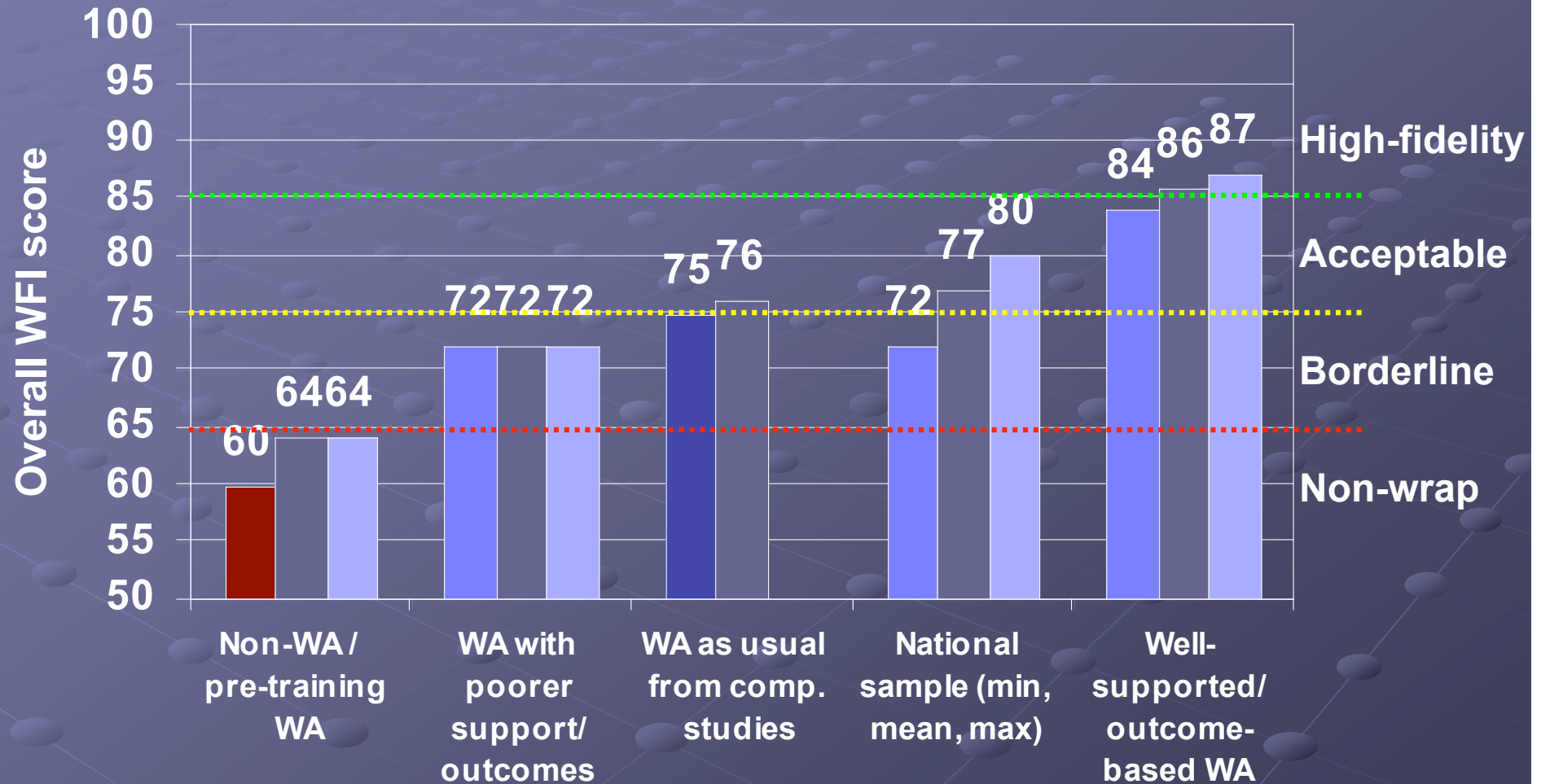
Bruns et al (2004): Association between fidelity & program and organizational supports

# WFI scores for a program over developmental stages



Rast & VanDenBerg (2004): Impact of coaching and certification on wraparound fidelity

# Summary: Is it Wraparound Yet?



# Conclusions

- There is a discernable pattern of WFI Fidelity scores from across studies
  - Wraparound vs. non-wraparound programs
  - Wraparound programs with different levels of support
  - Facilitators and/or programs that achieved more positive outcomes
- Site-level scores from the national WFI dataset show significant variability, but fall logically within the pattern



# Conclusions

- By combining data from these norm- and criteria-referenced approaches, we can make provisional guesses
  - What is wraparound?
  - What is “high-fidelity” wraparound?
- Also can be done for individual respondent WFI scores
- Likely to be useful for collaborating sites as well as in research studies



# Limitations

- Approach truly is art as much as science
  - especially in the absence of outcomes data
- We don't know much about the programs in the national sample
- Inconsistent methods used across studies reviewed and programs in national sample

# Concerns



- How to set fidelity thresholds for wraparound with local variations?
- How to reconcile with a lack of model standardization?
- Also, how to avoid fidelity standards providing a “ceiling” as well as a “floor”?



# Tell us what you think!

## ● Wraparound Evaluation and Research Team

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