

Measurement Properties of a Novel Survey to Assess Stages of Organizational Readiness for Evidence-Based Practice in Community Prevention Programs

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SCHOOL OF MEDICINE

Project Team

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Background

- Increasing numbers of evidence-based programs and policies for community health and chronic disease prevention
 - Community Guide to Preventive Services, Guide to Clinical Preventive Services, Cancer Control PLANET, RTIPS
- Many (most?) community-based programs are not applying the best available evidence in practice.

Background

Survey of state and local public health practitioners

- Only 30% of local public health practitioners had heard of the Community Guide
- In state-level agencies, 90% had heard of the Community Guide
 - Much fewer reported making changes to existing (20%) or new programs (35%) on the basis of recommendations

Brownson et al. *Am J Pub Hlth* 2007;97:1900-07.

Purpose

- Develop a brief, user friendly instrument to gauge readiness for evidence-based practice across a broad range of program areas
 - Need more practice-based evidence (Green and Glasgow. *Eval Health Prof* 2006; 29:126-153)
- Goals:
 1. Develop a brief, easy-to-administer tool based on theory
 2. Assess construct validity, reliability
 3. Examine associations with respect to known organizational properties
 4. Examine associations with respect to organizational culture/climate toward using evidence

Other organizational assessments

- Culture/climate

e.g. Glisson and James, The cross-level effects of culture and climate in human service teams. *J Org Behavior* 2002; 23:767-94.

Aarons and Sawitzky, Organizational climate partially mediates the effect of culture on work attitudes and staff turnover in mental health services. *Admin Policy Mental Hlth Serv Res* 2006; 33:289-301.

- Readiness for change

e.g. Weiner et al., Conceptualization and measurement of organizational readiness for change. *Med Care Res Rev* 2008; 65:379-436

Questionnaire Development

Steckler et al. (1992) Measuring the diffusion of innovative health promotion programs. *Am. Journal of Health Promotion*, 6(3):214-225

- 125+ questions!

Briss et al. (2004) Developing and using the guide to community preventive services: lessons learned about evidence-based public health. *Annu Rev Public Health*, 25: 281-302.

Four-stage readiness framework based on Diffusion of Innovations theory

- Awareness
- Adoption
- Implementation
- Maintenance

Questionnaire Development, cont.

- Items developed based on previous survey and cognitive response testing with key informants in funding agencies and practice settings
 - All responses on 7-point Likert scale
- Survey pilot-tested with key informants in practice settings

Operationalizing stages

Awareness: recognition of need and availability of sources for evidence-based interventions

- 4 items
- e.g. To what extent is the intervention staff within your agency aware of sources for evidence-based interventions?

Adoption: decision-making based on evidence

- 5 items
- e.g. The leadership within your agency encourages the use of evidence-based interventions to guide the intervention efforts.

Operationalizing stages, cont.

Implementation: capacity to carry out and adapt interventions to meet community needs

- 5 items
- e.g. Your agency currently has the resources (staff, facilities, partners, etc.) to implement the intervention.

Maintenance: extent the organization has embedded resources and activities to support ongoing EBP

- 9 items
- e.g. Your agency engages a diverse network of partners who actively support the intervention through the sharing of resources and/or participation in planning activities.

Survey Sample

- Response rate 70%; final n=243
- Agency Characteristics
 - State/local health departments (65.3%)
 - Health care provider (6.6%)
 - Community-based organization (13.2%)
 - Other (14.9%)
- Respondent Characteristics
 - Program manager (68.6%)
 - Direct service staff (17.8%)
 - Program support (4.0%)
 - Academic researcher/educator (1.6%)

Confirmatory Factor Analysis

Structural equation modeling software (AMOS v. 19.0.0)

Model building based on:

- Goodness-of-fit indices (CMIN/df, CFI, RMSEA)
- Factor loadings (keep if $>.4$)
- Modification indices (identify problem items, method effects)

Analysis guided by two questions:

1. Do scales work as latent factors?
2. Do latent factors correlate with each other

Model Development

Model	Model Fit Indices			
	CMIN/df	CFI	RMSEA (90% CI)	AIC
1. Initial Model				
Awareness (4) + Adoption (5) + Implementation (5) + Maintenance (9)	3			
			POOR FIT	
2. Split Awareness and Split Maintenance Scales				
Community Awareness (2) + Agency Awareness (2) + Adoption(5) + Implementation(5) + Resource Maintenance(5) + Evaluation Maintenance (4)	2			
			POOR TO MODERATE FIT	
3. Split Awareness and Split Maintenance Scales with additional modification				
Model 2 with modification	1			
			ADEQUATE TO GOOD FIT	

Scale Characteristics

	# Items in Factor	Chronbach's α	ICC (n=92)
Community Awareness	2	.706	0.50
Agency Awareness	2	.670	0.47
Adoption	3	.796	0.71
Implementation	5	.770	0.67
Evaluation Maintenance	4	.750	0.68
Resource Maintenance	4	.568	0.67

Factor Loadings

Stage	Low	High	Median
Community Awareness	.58	.90	N/A
Agency Awareness	.64	.81	N/A
Adoption	.60	.87	.79
Implementation	.49	.78	.66
Resource Maintenance	.43	.62	.47
Evaluation Maintenance	.48	.85	.70

p-values for all factor loadings $<.001$

Inter-correlations among readiness scales

	Agency Awareness	Adoption	Implementation	Resource Maintenance	Evaluation Maintenance
Community Awareness	.23	.12	.32	.42	.22
Agency Awareness		.83	.60	.39	.30
Adoption			.59	.44	.27
Implementation				.95	.49
Resource Maintenance					.53

Inter-correlations among readiness scales

	Agency Awareness	Adoption	Implementation	Resource Maintenance	Evaluation Maintenance
Agency Awareness		.83	.60	.39	.30
Adoption			.59	.44	.27
Implementation				.95	.49
Resource Maintenance					.53

Scale Performance

	Mean Score (s.d.) ¹	by Program Type	
		MPB Grantee Obesity Programs	Non-MPB Obesity Programs
Final Model			
Community Awareness	5.21 (1.13)	5.10	5.27
Agency Awareness	5.87 (0.96)	6.08	5.89
Adoption	6.00 (0.99)	6.10	6.12
Implementation	5.45 (0.91)	6.04 *	5.22
Evaluation Maintenance	5.73 (0.97)	5.77 *	5.27
Resource Maintenance	4.67 (1.04)	5.46 *	4.56

* p<.05

Organizational Climate and Research Affiliations

How did scale items relate to organizational culture/climate and whether or not the program had an affiliation with a university?

- Three items measuring organizational culture/climate
 - Good fit in SEM as a latent factor
- Affiliation with university (yes/no)

Associations between readiness stages, organizational climate/culture and university affiliation (n=243)

Readiness Stage	Organizational Climate	University Affiliation
Community Awareness	.22*	-.07
Agency Awareness	.55*	-.06
Adoption	.62*	-.08
Implementation	.79*	-.08
Evaluation Maintenance	.43*	.02
Resource Maintenance	.71*	-.14

*p < .05

Limitations

Further tool development/refinements

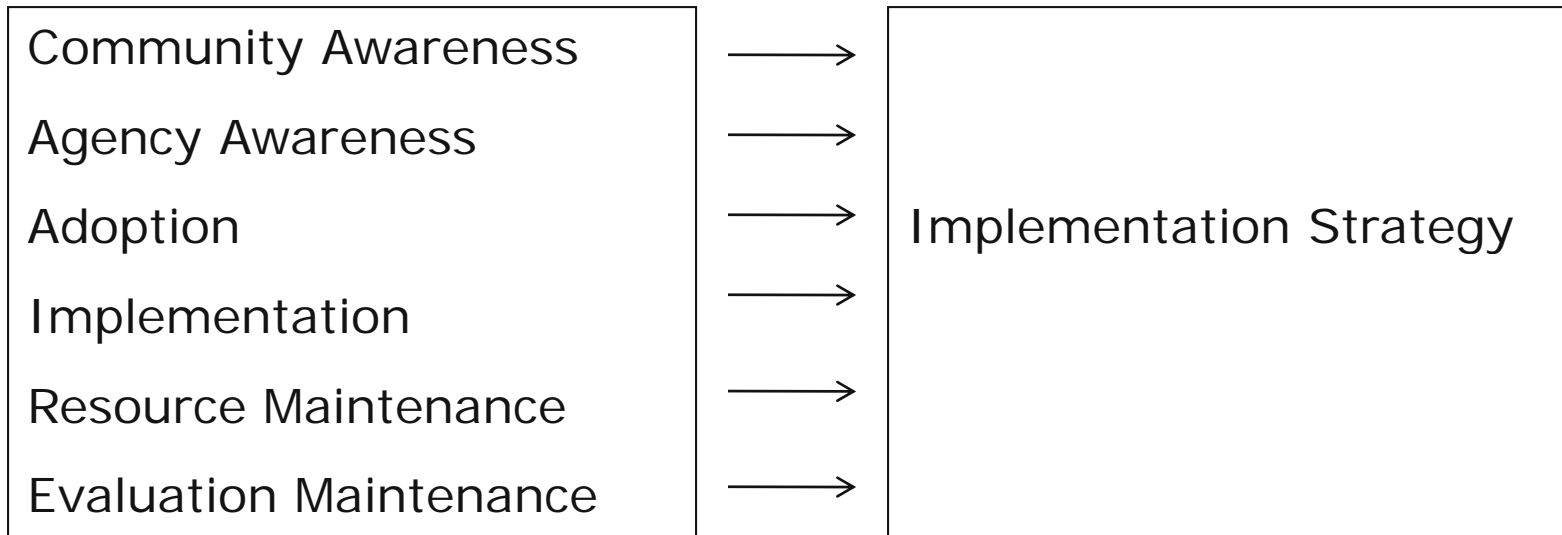
- Explore additional dimensions of stages
 - Awareness (split into 2 dimensions with only 2 items)
 - Maintenance (split into 2 dimensions, recent research suggests more)
 - See poster: Schell S, Luke D, Herbers S, Elliott M. Sustainability Assessment: A Framework and Measurement Tool for Chronic Disease Programs. Poster presented at: 4th Annual NIH Conference on the Science of Dissemination and Implementation; March 21-22, 2011; Bethesda, MD.
- Limited sample size- not able to test group comparisons in our SEM models

Limitations

Issues with application and interpretation

- Readiness for evidence-based practice may vary by type of practice setting; different measures needed
- Are we measuring “readiness” or “determinants of readiness” (Weiner *Implementation Sci* 2009: 4(67))

Applications in D&I Research



Applications in D&I Research

- Examine associations with other organizational characteristics (e.g., centrality of governance structure)
- Initial quantitative screen for more in-depth follow-up (mixed method design)
- Examine relationship between stages and measures of program success across various program areas
- Explore use as implementation outcome, ie, marker of success of implementation strategy (shift from high awareness/adoption but low implementation to high implementation)

Contact Information

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