Development, Validation, and Use of the Interdisciplinary Collaboration Questionnaire in the Leadership Education in Neurodevelopmental Disabilities (LEND) Program

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INTRODUCTION

• Providing **health care is inherently interdisciplinary** (Manser, 2009). No single discipline can address all needs presented by individuals, families, institutions, and communities. Quality health care requires a comprehensive approach, through **teams** consisting of health-related disciplines, with varying skills and perspectives (McDougal, 2003).

• Although interdisciplinary collaboration (IC) is a key approach to complex health issues, it is poorly understood. Despite consensus around its importance, there is **no universal definition** of its components that is applied across disciplines. Without a clear conception of IC, individuals may have varied expectations when engaging in and measuring collaborative activities.

• The Maternal and Child Health Bureau (MCHB) has prioritized interdisciplinary healthcare since its inception. Additionally, **health care reform** upon the passage of the Affordable Care Act has led to **increased attention** to IC and integrated health care systems.

• MCHB purports that health systems can best reach and serve increasingly diverse populations by providing community-based, culturally competent care, delivered by a highly qualified, interdisciplinary workforce. To this end, MCHB funds graduate and continuing education training (e.g., LEND programs) to promote IC and ensure interdisciplinary health leadership.

•A former CHOP LEND fellow developed the Interdisciplinary Collaboration Questionnaire (ICQ) to assess IC opportunities and skills among LEND trainees. The original instrument was developed through the conduct of a literature review and focus groups. The present study seeks to **evaluate the psychometric properties of the ICQ**.

MEASURES

Participants completed:

• **Interdisciplinary Collaboration Questionnaire** (ICQ)
  • 12-item retrospective self-report instrument assessing IC on 4-point Likert scale
  • Respondents rate how often they had opportunities to engage in IC activities, in the year prior to LEND training year (Baseline) and during the LEND training year (Post-Test)
  • Baseline ICQ data were used to establish psychometric properties
  • Baseline and post-test ICQ data were used to assess change over the LEND training year

• **Core Competency Measure** (CCM)
  • 44-item retrospective self-report instrument assessing 6 LEND core competencies, administered concurrently with the baseline ICQ
  • Subscales: Clinical, Interdisciplinary, Family-Centered/Cultural Competency, Community, Research, & Advocacy/Policy

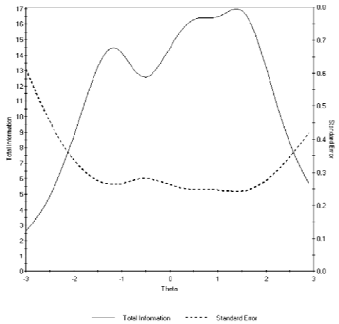
PARTICIPANTS

Participants (*N*=186) were LEND trainees across nine cohorts
  • 14 disciplines: developmental pediatrics, psychology, physical therapy, occupational therapy, speech-language pathology, audiology, nursing, health care administration, genetics counseling, nutrition, social work, special education, dentistry, and family leadership.
  • 92% female, 8% male
  • 72% White, 9% Black/African American, 8% Asian, 2% Hispanic/Latino, 0.01% Pacific Islander, 6% Multiracial, 3% No Response

RESULTS

• A single-factor confirmatory factor analysis (CFA) model adequately fit the data, indicating that, as hypothesized, the 12 ICQ items assess a **single unidimensional construct** (CFI = .95, TLI = .94, RMSEA = .12). Additionally, the 12 ICQ items are **internally consistent** (Cronbach's α = .92).

• Item response theory (IRT) models were fit to the ICQ data to assess the degree to which items discriminate among respondents with varying levels of IC. Average item discrimination (a) was 2.22 and item difficulties (b1-b3) ranged from -2.06 to 3.13 (range = 5.19 logits). These results indicate that the **scale precisely assesses IC** among trainees with a **broad range** of IC opportunities and skills.



•Inter-scale correlations revealed strong positive associations between the ICQ and the CCM Interdisciplinary (r=.43, p<.001), Family-Cultural (r=.33, p<.001), and Community (r=.32, p<.001) subscales, providing evidence of **convergent validity**. ICQ scores were unrelated to scores on the CCM Research subscale (r=.10, p=0.19), which provides evidence of **divergent validity**.

	CCM: Clinical	CCM: Interdis	CCM: Fam/Cult	CCM: Commun	CCM: Research	CCM: Advocacy
ICQ	.18*	.42***	.33***	.32***	.10	.19*

* p < .05 *** p < .001

•A repeated-measures analysis of variance (RMANOVA) revealed that that LEND trainees reported **increased IC skills across the LEND training year**, F (1,126) = 138.96, p<.001. **No discipline effects** were observed.

RESULTS cont'd

ICQ Item	*M (SD)*	CFA Loading	*a*	*b1*	*b2*	*b3*
1. Been given protected time to collaborate with members of different health disciplines	2.08 (0.75)	0.67	1.65	-1.22	1.06	2.40
2. Felt supported by supervisors when making efforts to collaborate with members of other disciplines	2.70 (0.87)	0.69	1.57	-2.06	-0.34	1.35
3. Shared clinical knowledge with members of other health disciplines	2.43 (0.76)	0.83	2.56	-1.82	0.30	1.53
4. Learned about roles and responsibilities of other health disciplines	2.42 (0.73)	0.73	1.89	-2.06	0.31	1.94
5. Developed and shared clinical goals with members of other health disciplines	2.15 (0.82)	0.78	2.26	-1.05	0.79	1.79
6. Practiced communicating effectively with members of health disciplines	2.58 (0.88)	0.84	2.78	-1.59	0.02	1.12
7. Practiced taking on a leadership role on a multidisciplinary team	1.78 (0.90)	0.72	1.77	-0.15	1.34	2.01
8. Practiced decision-making with members of other health disciplines	2.23 (0.78)	0.87	3.43	-1.12	0.55	1.66
9. Effectively managed conflicts with they arose between members of different disciplines	1.68 (0.74)	0.71	1.72	-0.12	1.57	3.13
10. Felt comfortable offering differing opinions from members of other health disciplines	2.15 (0.78)	0.78	2.22	-1.15	0.78	1.97
11. Been able to develop strong working relationships with members of other health disciplines	2.49 (0.88)	0.84	2.86	-1.25	0.03	1.33
12. Had time devoted by your supervisors to develop relationships with members of other health disciplines	1.89 (0.74)	0.75	1.97	-0.63	1.28	2.57

For each question, response categories were None (1), Some (2), A lot (3), & A whole lot (4)

CONCLUSIONS

• The ICQ is a reliable and valid measure of IC among trainees in a leadership education program.
• The ICQ could be used by all LEND training programs as a standard tool to assess IC opportunities and skills, which are highly prioritized aspects of MCHB-funded leadership training.

KEY REFERENCES

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