A scale to measure healthcare providers' attitudes to interprofessional education and collaborative practice.

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INTRODUCTION

- Health professions schools have increasingly recognized the importance of interprofessional education and collaboration (IPEC). However, assessment of IPEC competencies is still limited due to a lack of psychometrically sound assessment instruments and scales. We recently developed a questionnaire[1] to measure physicians' attitudes toward IPEC based on published competency frameworks [2,3].

- The purpose is to extend our previous work to include input from diverse allied health professionals to ensure a scale with a similar factor structure emerges from the combined dataset.

MATERIALS & METHODS

- Upon ethics approval from Johns Hopkins Medicine, all affiliated full-time healthcare professionals were invited to participate in an online Qualtrics survey.

- The scale Items were on a 5-point Likert scale from: 1 = “Strongly disagree” to 5 = “Strongly agree.” It included 35 items:
  - 7 teamwork/collaboration;
  - 5 roles/responsibilities;
  - 6 communication;
  - 5 reflection/learning;
  - 6 the patient;
  - 6 ethics and attitudes.

- We used psychometric methods:
  - Exploratory Factor Analysis (EFA) to identify the underlying factor structure,
  - Item Response Theory (IRT) to provide depth and precision to the EFA findings by considering the probabilistic nature of item responses and model fit statistics.

RESULTS

•The combined dataset included 930 healthcare professionals
- 379 physicians, 419 nurses, 76 pharmacist/pharmacy technicians, 22 respiratory therapists, 22 physical/occupational therapists, and 12 registered dieticians.
- Most were from medicine and medical subspecialties (333/930, 35.8%) and surgery and surgical subspecialties (297/930, 31.93%).

•A factor analysis resulted in a 22-item scale with a 5-factor solution explaining 59% of the variance.

•Examination of the items included in each factor confirmed the original five factors as
1. Teamwork & communication,
2. Patient-centered care,
3. Roles & responsibilities,
4. Ethics & attitudes, and
5. Reflective practice.

Table 1. Factor structure and sample items and Eigenvalues

Item	Factor				
	1	2	3	4	5
Shared learning with other health care professionals will increase my ability to understand clinical problems.	.762				
Shared learning (training with other professionals) will help me become a more effective member of a health care team.	.704				
I like to understand the patient’s side of the problem.		.726			
Thinking about the patient as a person is important in getting the treatment right.		.686			
I know the roles of other professionals in a healthcare team.			.721		
I am aware of the differences in scope of practice concerning team members from other disciplines.			.699		
Anyone in the health care team can make mistakes.				.593	
It is important for a team to function well under uncertainty.				.539	
I research evidence-based practices related to team functioning to solve problems.					.569
I reflect on team performance after events to plan future actions in a health care team.					.546
Extraction Method: Principal Axis Factoring.					
Rotation Method: Varimax with Kaiser Normalization.					
a Rotation converged in 7 iterations.					

RESULTS (CONT.)

IRT rating scale model showed item fit statistics for more precise scale development.

Table 2. Item measures and fit statistics for six IPEC attitude constructs

		Rating Scale Model (RSM)				
Construct	Item	Diff	SE	Infit MNSQ	Outfit MNSQ	Pt Meas. Cor.
1: Teamwork and Communication	1	0.3	0.1	1.2	1.3	0.8
	2	0.0	0.1	1.1	1.2	0.7
	3	-0.8	0.1	1.0	1.0	0.7
	4	0.2	0.1	1.0	1.0	0.8
	5	-0.2	0.1	0.9	0.9	0.7
	6	0.7	0.1	0.9	0.9	0.8
	7	-0.2	0.1	0.8	0.8	0.8
2: Patient-Centered Care	1	0.4	0.1	1.2	1.2	0.7
	2	-0.5	0.1	1.1	1.0	0.7
	3	0.4	0.1	0.9	0.9	0.8
	4	-0.2	0.1	0.8	0.7	0.8
3: Roles and Responsibilities	1	-0.7	0.1	1.1	1.5	0.7
	2	0.0	0.1	0.9	0.8	0.8
	3	0.7	0.1	0.9	0.8	0.8
4: Ethics and Attitudes	1	-0.2	0.1	1.1	1.1	0.7
	2	0.6	0.1	1.0	1.0	0.8
	3	-0.1	0.1	1.0	1.0	0.7
	4	-0.3	0.1	0.8	0.7	0.7
5: Reflective Practice	1	1.2	0.1	1.1	1.2	0.8
	2	0.3	0.1	0.9	1.0	0.7
	3	-0.5	0.1	0.9	0.9	0.7
	4	-1.0	0.1	0.8	0.8	0.6

CONCLUSION

- Exploratory factor analysis produced a 22-item scale that measures six of the five factors from the domains identified in the literature.
- As in our prior study, communication and teamwork factored together.
- Item Response Theory showed that it can improve the accuracy of factor interpretation, item selection, and overall questionnaire design.
- Future multi-center studies will be needed to conduct confirmatory factor analysis.

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