ASSESSING THE IMPACT OF INTERPROFESSIONAL EDUCATION ON HEALTH CARE PROFESSIONALS ATTITUDES AND INTERPROFESSIONAL COLLABORATIVE COMPETENCIES: A MIXED METHODS STUDY

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BACKGROUND & SIGNIFICANCE

- There is an **urgent need** for health care professionals to **collaborate effectively** in order to improve patient outcomes.
- ***Interprofessional education (IPE)*** is the foundation of ***interprofessional collaboration (IPC).***

IPE occurs **when two or more professions learn about, with, and from each other to improve collaboration and quality of care.** [1,2]

IPC is a type of interprofessional work involving various health care professionals who come together regularly to solve problems, provide services, and enhance health outcomes.[9]

Numerous *benefits of IPE and IPC:* [11,12,14,15]

- Increased attitudes towards teamwork
- Increased knowledge, understanding of one another's role
- Increased communication and collaboration skills
- Reduction in clinical error

Gaps in the Literature

- Impact of IPE on behavior change
- Sustainability and longevity of the IPE outcomes
- Lack of mixed methods studies

PURPOSE & AIMS

PURPOSE

- To assess health care professional's attitudes and impressions towards working in interprofessional health care teams and their interprofessional collaborative competencies.

MIXED METHODS RESEARCH QUESTION

What results emerge from comparing the qualitative data about health care professional's descriptions of their experience working in interprofessional teams with outcome quantitative instrument data measured on attitudes toward working in teams and interprofessional competency questionnaires?

AIMS

1. Examine the relationship between health care professionals experience with formal IPE programming and self-reported attitudes towards health care teams.

2. Examine the relationship between health care professionals experience with formal IPE programming and self-reported interprofessional collaborative competencies.

3. To understand how health care professionals describe working in teams and the interprofessional competencies they feel they need to work in teams.

RESEARCH QUESTIONS

Quantitative	Hypotheses	Qualitative
1.What is the relationship between health care professional's experience with formal IPE programming and their self-reported attitudes toward health care teams? **2. Is there a correlation between the number of hours of formal IPE health care professionals complete and their attitudes towards working in interprofessional health care teams?**	H1. There is a correlation between the number of hours of formal IPE health care professionals complete and their attitudes towards working in interprofessional health care teams.	**1. What are health care professional's impressions of working in interprofessional teams?**
3. What is the relationship between health care professional's experience with formal IPE programming and their self-reported interprofessional competencies? **4. Is there a correlation between the number of hours of formal IPE health care professionals complete and their interprofessional collaborative competencies?**	H2. There is a correlation between the number of hours of formal IPE health care professionals complete and their interprofessional collaborative competencies.	**2. How do health care professionals describe the competencies they need to work within interprofessional teams?**

CONCEPTUAL FRAMEWORK

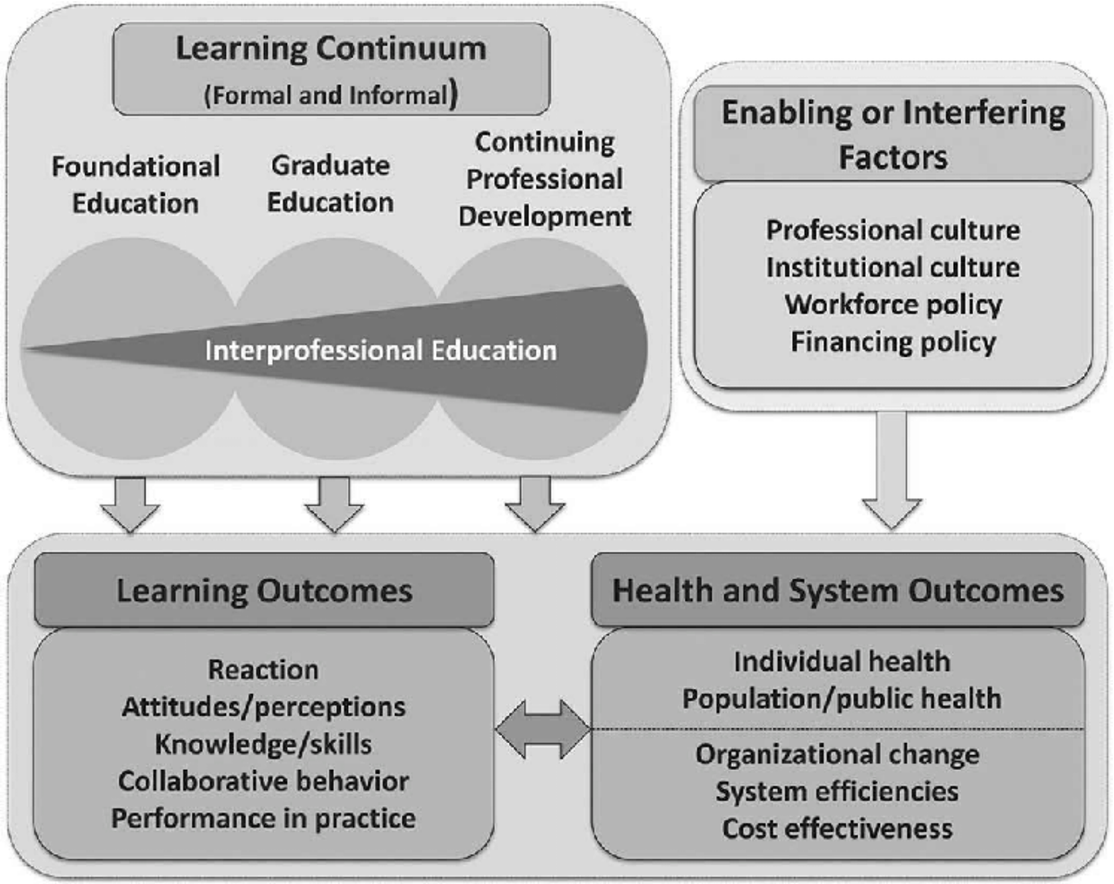
1. **Learning Continuum**
   - Amount and type of formal IPE completed

2. **Learning Outcomes**
   - IPE and Attitudes Toward Interprofessional Health Care Teams Scale (ATHCT)[2]
   - IPE and Interprofessional Education Competency Tool (IPEC)[11]
   - Open-ended questions

3. **Health and System Outcomes**
   - Open-ended questions

4. **Major Enabling and Interfering Factors**
   - Open-ended questions

Interprofessional Learning Continuum Model



METHODOLOGY

Convergent Parallel Design

1. Data collection

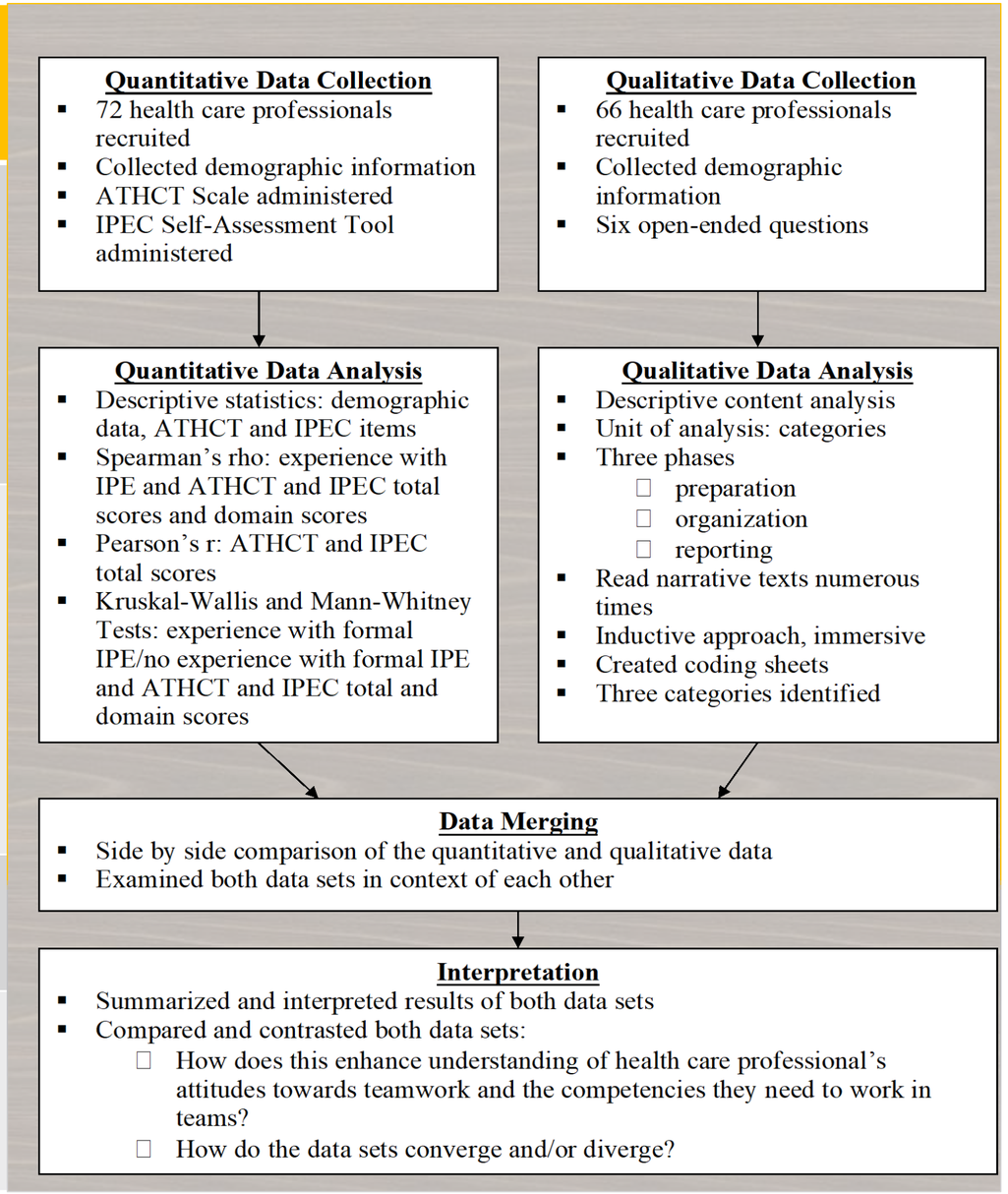
- Online questionnaire
  - ATHCT
  - IPEC Self-Assessment
  - Six open-ended questions

2. Data analysis

- Descriptive statistics, correlation coefficients, Kruskal-Wallis, Mann-Whitney
- Descriptive content analysis

3. Merge the data sets

4. Interpret merged results



QUANTITATIVE PARTICIPANT DEMOGRAPHICS & MEAN SCORES

Quantitative Strand Participant Demographics	n (%) N = 72
Type of Health Care Professional	
Medical Doctor	5 (6.9)
Advanced Practice Registered Nurse	3 (4.2)
Registered Nurse	53 (73.6)
Respiratory Therapist	10 (13.9)
Spiritual Services	1 (1.4)
Years of Professional Experience	
1-3 years	19 (26.4)
4-6 years	10 (13.9)
7-9 years	6 (8.3)
10-12 years	8 (11.1)
13-15 years	5 (6.9)
More than 15 years	24 (33.3)
Gender	
Female	55 (76.4)
Male	17 (23.6)

Mean Scores on Attitudes Towards Working in Teams Scale and Interprofessional Collaborative Competency Tool	M	SD	Range
Total ATHCT	52.74	4.835	37-64
Domain #1: Quality of Care	45.92	5.354	25-55
Domain #2: Time Constraints	6.85	2.046	3-12
Total IPEC	66.52	6.194	54-80
Domain #1: Interprofessional Interaction	31.93	3.743	23-40
Domain #2: Interprofessional Values	34.59	3.019	29-40

Experience with Formal IPE	n (%)
Completed in undergraduate education	17 (23.6)
Completed in graduate education	7 (9.7)
Completed post-licensure via employer	11 (15.3)
Completed as professional development or continuing education	19 (26.4)
No experience with formal IPE	18 (25.0)

Amount of IPE Completed in Hours	n (%)
None	18 (25.0)
1 hour or less	3 (4.2)
2-3 hours	3 (4.2)
4-5 hours	6 (8.3)
6-7 hours	3 (4.2)
8-9 hours	3 (4.2)
10 or more hours	35 (50.0)

Time Since Formal IPE was Completed	n (%)
Not applicable	18 (25.0)
Less than 6 months	18 (25.0)
6 months to 11 months	5 (6.9)
1-2 years	19 (26.4)
3-4 years	9 (12.5)
5 or more years	3 (4.2)

Type of Formal IPE Completed	n (%)
None	18 (25.0)
Didactic/classroom	17 (23.6)
Simulation/clinical	2 (2.8)
Workshop	11 (15.3)
Continuing education	2 (2.8)
Combination of classroom and clinical/simulation	12 (16.7)
Combination of classroom and workshop	5 (6.9)
Professional conference	3 (4.2)
Other – more than 3 types	2 (2.8)

QUANTITATIVE RESULTS

<u>Research Question #1:</u> What is the relationship between health care professional's experience with formal IPE programming and their self-reported attitudes toward health care teams?

- ***Spearman's rho:*** No significant relationship.

<u>Research Question #2:</u> Is there a correlation between the number of hours of formal IPE health care professionals complete and their attitudes towards working in interprofessional health care teams?

- ***Spearman's rho:*** No significant correlation.

- ***Kruskal-Wallis Tests & Mann-Whitney Test:*** **No significant differences** in attitudes between health care professionals who have completed zero hours of formal IPE and those who have completed 10 or more hours of formal IPE.

QUANTITATIVE RESULTS

<u>Research Question #3:</u> What is the relationship between health care professional's experience with formal IPE programming and their self-reported interprofessional competencies?

- ***Spearman's rho: Significant weak relationship*** between the ***type*** of ***formal IPE*** completed and ***interprofessional interactions.***

<u>Research Question #4:</u> Is there a correlation between the number of hours of formal IPE health care professionals complete and their self-reported interprofessional competencies?

- ***Spearman's rho:*** No significant correlation.

- ***Kruskal-Wallis Tests & Mann-Whitney Test:*** **No significant differences** between health care professionals who have completed zero hours of formal IPE and those who have completed 10 or more hours of formal IPE.

Results of Health Care Professional's Experience with Formal IPE and Attitude and Collaborative Competency Scores

	Experience with Formal IPE		Number of Hours of Formal IPE Completed		Time Since Completed Formal IPE		Type of Formal IPE	
	H (p)	r_s (p)	H (p)	r_s (p)	H (p)	r_s (p)	H (p)	r_s (p)
ATHCT Total Score	1.692 (.792)	-.140 (.240)	3.514 (.742)	.032 (.789)	5.623 (.345)	-.034 (.775)	5.505 (.788)	.112 (.351)
ATHCT Domain #1	2.132 (.712)	-.141 (.238)	4.024 (.673)	.032 (.790)	1.808 (.875)	-.013 (.911)	5.200 (.817)	.021 (.862)
ATHCT Domain #2	0.978 (.913)	0.39 (.748)	11.184 (.083)	-.028 (.814)	2.258 (.812)	-.023 (.851)	11.971 (.215)	.190 (.109)
IPEC Total Score	2.941 (.568)	-.149 (.211)	5.002 (.544)	.133 (.264)	2.781 (.734)	.105 (.378)	6.376 (.702)	.166 (.162)
IPEC Domain #1	5.925 (.205)	-.183 (.124)	4.904 (.556)	.196 (.099)	3.574 (.612)	.109 (.362)	5.828 (.757)	**.236* (.046)**
IPEC Domain #2	0.646 (.958)	-.072 (.548)	8.687 (.192)	.004 (.972)	1.585 (.903)	.051 (.669)	8.961 (.441)	.059 (.625)
Total ATHCT & Total IPEC				**Pearson's r 0.508 * (0.000)**				

QUALITATIVE DEMOGRAPHICS

Qualitative Strand Participant Demographics	n (%) N = 66
Type of Health Care Professional	
Medical Doctor	4 (6.1)
Advanced Practice Registered Nurse	3 (4.5)
Registered Nurse	49 (74.2)
Respiratory Therapist	9 (13.6)
Spiritual Services	1 (1.5)
Years of Professional Experience	
1-3 years	17 (25.8)
4-6 years	8 (12.1)
7-9 years	5 (7.6)
10-12 years	7 (10.6)
13-15 years	5 (7.6)
More than 15 years	24 (36.4)
Gender	
Female	51 (77.3)
Male	15 (22.7)

Open-Ended Questions
1. Please describe what it is like for you to work in an interprofessional health care team. 2. Please tell me what helps you work in an interprofessional health care team. 3. Please tell me some of the challenges of working in an interprofessional health care team. 4. Please describe the competencies you feel you need to work in interprofessional health care teams. 5. Please describe how you use interprofessional competencies to work in teams. 6. Please describe an example of how you work in an interprofessional team.

QUALITATIVE RESULTS: COMMUNICATION

Effective Communication

- Essential, facilitates safe patient care
- Requires patience, active listening
- Must be nonjudgmental, intentional
- Direct, clear

Ineffective Communication

- Disrupts team process
- Increases patients risks for adverse events
- Occurs due to lack of time and lack of formal communication paths
- Use of condescending tones, negative attitudes

"Working in an interprofessional team is best when all involved professionals are open, nonjudgmental, and easily approachable." (P14)

"Listening is an integral part of communication." (P33)

Intentionally asking each member to speak their truth about a patient." (P27)

"Can be difficult to arrange when things are busy and there can sometimes be a condescending tone that inhibits open communication." (P24)

…"A lot of conflict in health care can be resolved with better communication." (P46)

QUALITATIVE RESULTS: VALUE

- Mutual trust, respect, feeling valued, need for validation.
- Feeling undervalued affects one's willingness to participate in collaborative practice.

"By having mutual respect for everyone on the team you can better care for the patient and make care plans." (P24)

"Mutual respect for our work – no matter what role we play." (P27)

"Getting all disciplines to recognize the value of making time to work in the team vs silos." (P66)

"Feelings of disrespect and feelings that my role is 'unnecessary' to the overall care plan formation." (P8)

QUALITATIVE RESULTS: ROLES

- Must fully understand one's own role on the team.
- Must understand one another's role and contribution to the team.
- Must possess clinical competence.

"Understanding the other team member's role. Knowing your role as a team player, especially in your discipline." (P61)

"Working as part of the care team has brought a lot of awareness to the complexity behind patient care. It has opened my eyes to a better understanding of the integral parts that each team member plays in providing holistic and whole person care to the patient and families. While working individually is important, I know the patient receives better care and consistency found in team based care." (P46)

"Sometimes limited perspective or 'tunnel vision' in one's own profession can lead to a lack of understanding about others' professions." (P25)

MIXED METHODS RESULTS

CONVERGENCE

- **Positive correlation between attitudes towards team work and collaborative competencies.**
  - High ATHCT and IPEC scores.
  - Qualitative data reported teamwork is beneficial, essential, and best for patient care.
- **Communication Category**
  - Lowest scoring IPEC items
  - Identified need/desire for more IPE training (communication strategies).
- **Role and Value Category**
  - Highest scoring items on IPEC were related to trust, value, and respect.

DIVERGENCE

- **Type of IPE training correlated with interprofessional interaction competencies and attitudes towards teamwork.**
  - A combination of IPE trainings associated with higher interprofessional interaction scores.
- **Number of hours** of formal IPE completed correlated with higher attitudes and interprofessional competency scores.
- **Qualitative data**
  - Identified need for more training.
  - Completion of IPE was not discussed as a facilitator of IPC.

IMPLICATIONS FOR PRACTICE

1. **Assess attitudes towards working in teams and interprofessional collaborative competencies prior to designing IPE trainings/courses:**
   - Establishes a baseline
   - Tailor trainings to the participant needs

2. **Offer IPE trainings that include both didactic and experiential components.**

3. **Offer annual or biennial IPE trainings:**
   - Participants who completed IPE training in past two years reported more favorable attitudes towards teamwork and higher abilities to interact interprofessionally.

4. **IPE curriculum/training content should include:**
   - Strategies to improve interprofessional communication
   - Opportunities to enhance role clarity
   - Strategies to uphold relationships (value, trust, respect, validation)

FUTURE RESEARCH NEEDS

Future Research Needs

- **Continued exploration: 'dose' of IPE**
  - One hour or less of IPE had most negative attitudes towards teamwork and lowest interprofessional interaction scores
  - 8-9 hours of formal IPE had the highest attitudes towards teamwork
  - 10 or more hours had the highest interprofessional interaction scores
  - Need larger sample size to examine this further
- **Continued exploration: how often IPE should be completed and what type is most effective**
  - Those who completed IPE in last two years or less had higher scores
  - Those who completed a combination of didactic and experiential IPE had higher scores

Limitations

- **Small convenience sample**
  - Medium effect size
- **Use of one hospital**
- **Low response rates, self-report**

CONCLUSION

- **Health care professional's attitudes towards teamwork are associated with their interprofessional collaborative competencies.**
  - Assess both prior to participating in and/or designing IPE.
- **Interprofessional collaboration is influenced by several factors:**
  - Type of IPE, timing of IPE.
  - Extent to which each member feels valued.
  - The extent to which each member understands one another's role.
  - Ability to communicate effectively.
- **IPE trainings need to include each of these to be effective and to achieve its intended outcomes of better collaboration and better patient outcomes.**

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