

AMERICAN INTERPROFESSIONAL HEALTH COLLABORATIVE:
TRANSCENDING BOUNDARIES, TRANSFORMING LEARNING



INTERPROFESSIONAL WEBINAR SERIES

A LEADERSHIP DISCUSSION ON INTERPROFESSIONAL EDUCATION

**Assessment of IPE to Move Beyond
Attitudes: Featured tools and case studies
from the field**

Thursday, February 12, 2015

Moderator & Presenter



Sarah Shrader, PharmD
Clinical Associate Professor,
University of Kansas, School of Pharmacy



Presenters



Amy Blue, PhD

Associate Vice President for
Interprofessional Education,
Health Sciences Associate Dean for
Educational Affairs,
College of Public Health and
Health Professional, University of Florida



Vernon Curran, PhD

Associate Dean of Educational Development
Professor of Medical Education
Faculty of Medicine,
Memorial University of Newfoundland



Assessment of IPE to Move Beyond Attitudes: Featured Tools and Case Studies from the Field

Part 2

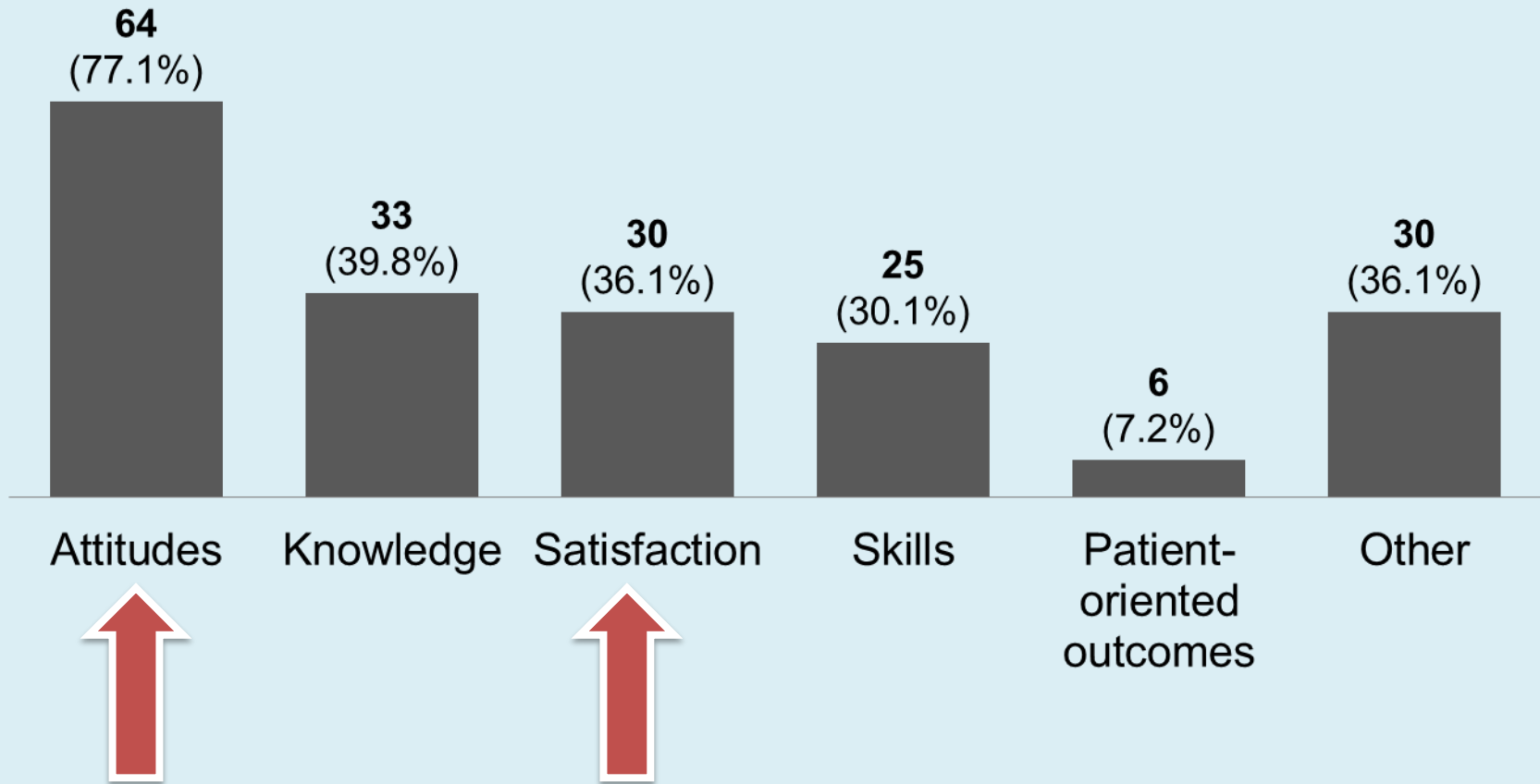
February 12, 2015

Sarah Shrader, PharmD, FCCP, BCPS, CDE
(moderator)

Assessment Beyond Attitudes

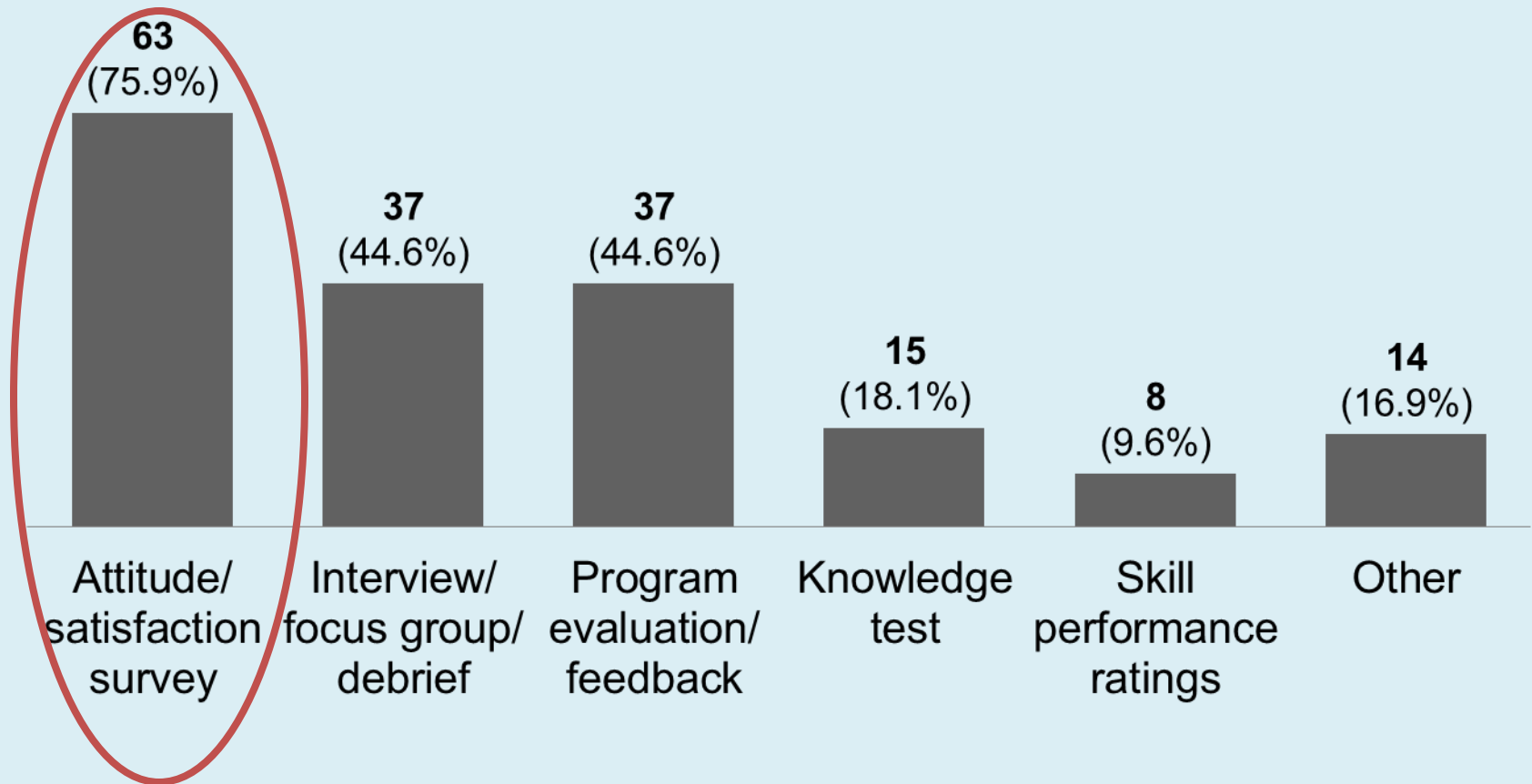
- Intensifying interest to assess IPE beyond attitudinal measures
- Quantitative, qualitative, and mix-methods approach
- Cochrane Review Updated 2013:
“To improve the quality of evidence relating to IPE and patient outcomes or healthcare process outcomes, the following three gaps will need to be filled: first, studies that assess the effectiveness of IPE interventions compared to separate, profession-specific interventions; second, RCT, CBA or ITS studies with qualitative strands examining processes relating to the IPE and practice changes; third, cost-benefit analyses.”

Evaluation Outcomes Measured



Abu-Rish, E. et al. Current Trends in Interprofessional Education of Health Sciences Students: A Literature Review. 2012;26: 444-51.

Assessment Methods



Abu-Rish, E. et al. Current Trends in Interprofessional Education of Health Sciences Students: A Literature Review. 2012;26: 444-51.

A Point to Ponder

- Interprofessional Activity/Program Evaluation
VS.
- Interprofessional Learner Assessment

Kirkpatrick/Barr's Evaluation Framework

Level 1a: Reaction

- Learners' views on the learning experience and its interprofessional nature

Level 2a: Modification of attitudes/perception

- Changes in reciprocal attitudes between participant groups.
Changes in perception or attitude towards the value and/or use of team approaches to caring for a specific patient/client group.

Level 2b: Acquisition of knowledge and/or skills

- Including knowledge and skills linked to interprofessional collaboration.

Level 3: Behavioral change

- Identifies individuals' transfer of interprofessional learning to their practice setting and their changed professional practice

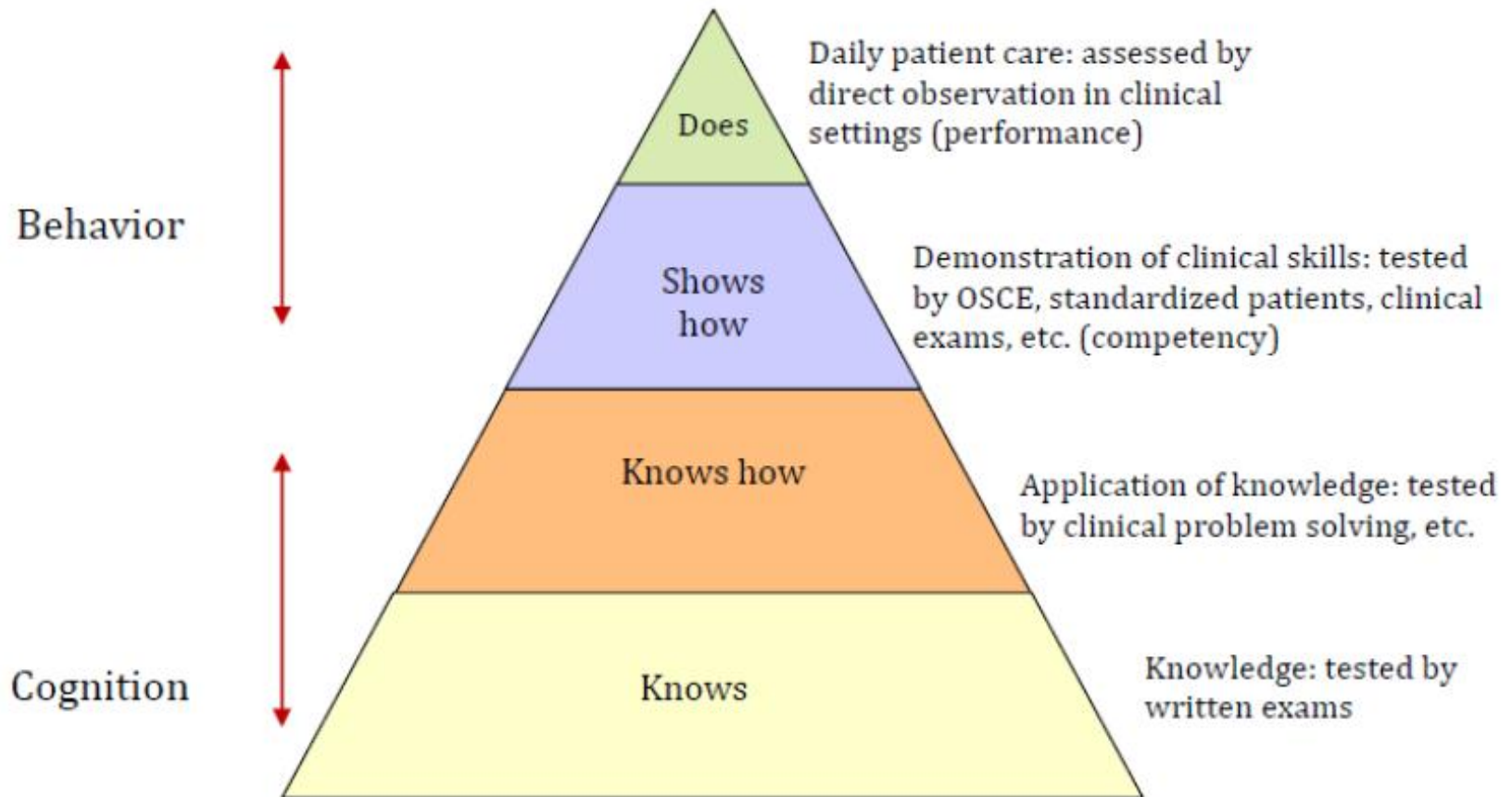
Level 4a: Change in organizational practice

- Wider changes in the organization and delivery of care

Level 4b: Benefits to patients/clients

- Improvements in health or well-being of patients/clients

Miller's Pyramid of Assessment



Adapted from: Ramani S, Leinster S, AMEE Guide no 34: Teaching in the clinical environment. *Medical Teacher*, 2008;30(4):347-364.

Additional Resources

Canadian Interprofessional Health Collaborative. An inventory of quantitative tools measuring interprofessional education and collaborative practice outcomes. 2012 Aug. Available from <http://www.chd.ubc.ca/news/featured-inventory-quantitative-tools-measure-interprofessional-education-and-collaborative-pra>.

National Center for Interprofessional Practice and Education Measurement Instruments
<https://nexusipe.org/measurement-instruments>

Additional Resources

Valentine MA, Nembhard IM, Edmondson AC.
Measuring teamwork in health care settings: A
Review of Survey Instruments [Internet]. Harvard
Business School. 2011 May. Report No.:11-116.
Available from:

<http://hbswk.hbs.edu/item/6727.html>.

Measuring the Impact of Interprofessional
Education on Collaborative Practice and Patient
Outcomes: A Consensus Study. October 7, 2014.
Available from:

[https://www.iom.edu/Activities/Global/Measuring
theImpactofInterprofessionalEducation/2014-OCT-
07.aspx](https://www.iom.edu/Activities/Global/Measuring%20theImpactofInterprofessionalEducation/2014-OCT-07.aspx)

Additional Resources

Blue A, Chesluk B, Conforti L, Holmboe E.
Assessment and Evaluation in Interprofessional
Education: Exploring the Field.

- Article accepted for publication in the Journal of Allied Health
- Webinar from 2014 posted on National Center Resource Exchange.

Development, Validation and Reliability of the Interprofessional Collaborator Assessment Rubric (ICAR)

Vernon Curran, MEd, PhD

Associate Dean of Educational Development

Professor of Medical Education

Faculty of Medicine

Mark Hayward, MSc, MD Student

Faculty of Medicine

ICAR Development Team



Vernon Curran, MEd, PhD, Memorial University

Lynn Casimiro, PhD, PT, Montfort Hospital

Valerie Banfield, RN, MN, Registered Nurses Professional Development Centre

Pippa Hall, MD, CCFP, MEd, FCFP, University of Ottawa

Tracy Gierman, MA, Academic Health Council-Champlain Region

Kelly Lackie, RN, MN, CNCC(C), Registered Nurses Professional Development Centre

Ivy Oandasan, MD, MHSc, CCFP, FCFP, University of Toronto

Brian Simmons, BM, FRCPC, University of Toronto

Susan Wagner, MSc(CD), Reg. SLP(C), University of Toronto

Outline



- **Rationale**
- **ICAR Construction**
- **Pilot Study**
- **Field Test - Multi-Source Feedback**

Rationale



- Need for reliable and valid assessment tools to evaluate competency achievement in the area of IPE.
- Assessment rubrics are becoming increasingly popular in post-secondary education as educators move toward more authentic, competency-based assessments that rely on performance indicators.

Methodology - ICAR Development & Validation



- **Stage I: Competency Development**
 - ❖ **Typological analysis of peer-reviewed and grey literature**
 - ❖ **Delphi Survey (English/French)**
 - **Importance/Clarity of competencies**
- **Stage II: Rubric Development**
 - ❖ **Draft rubric constructed**
 - ❖ **Multi-site focus groups**
 - **Faculty and Students**
 - **English/French**

Interprofessional Collaborator Assessment Rubric (ICAR)



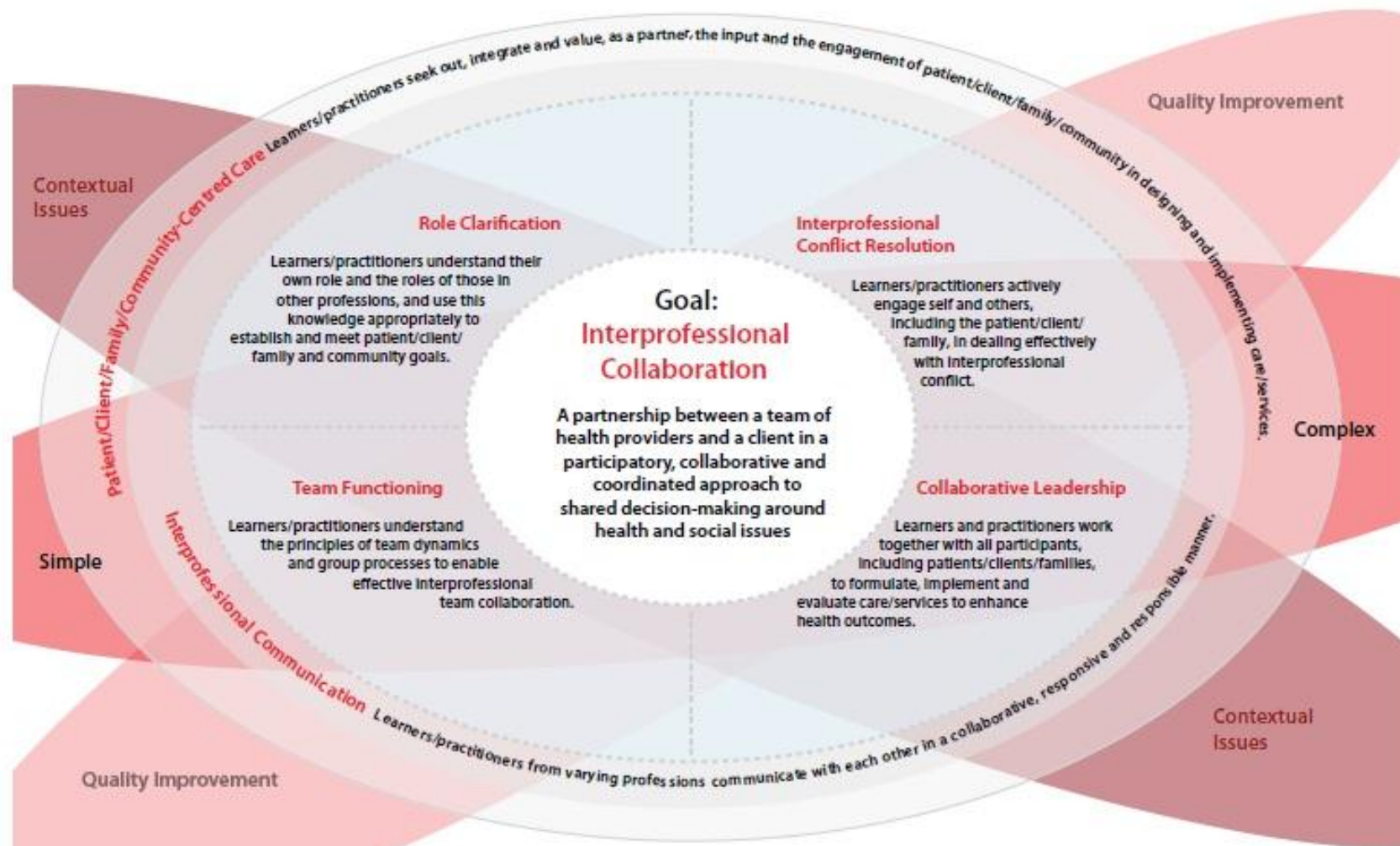
Competency Categories:

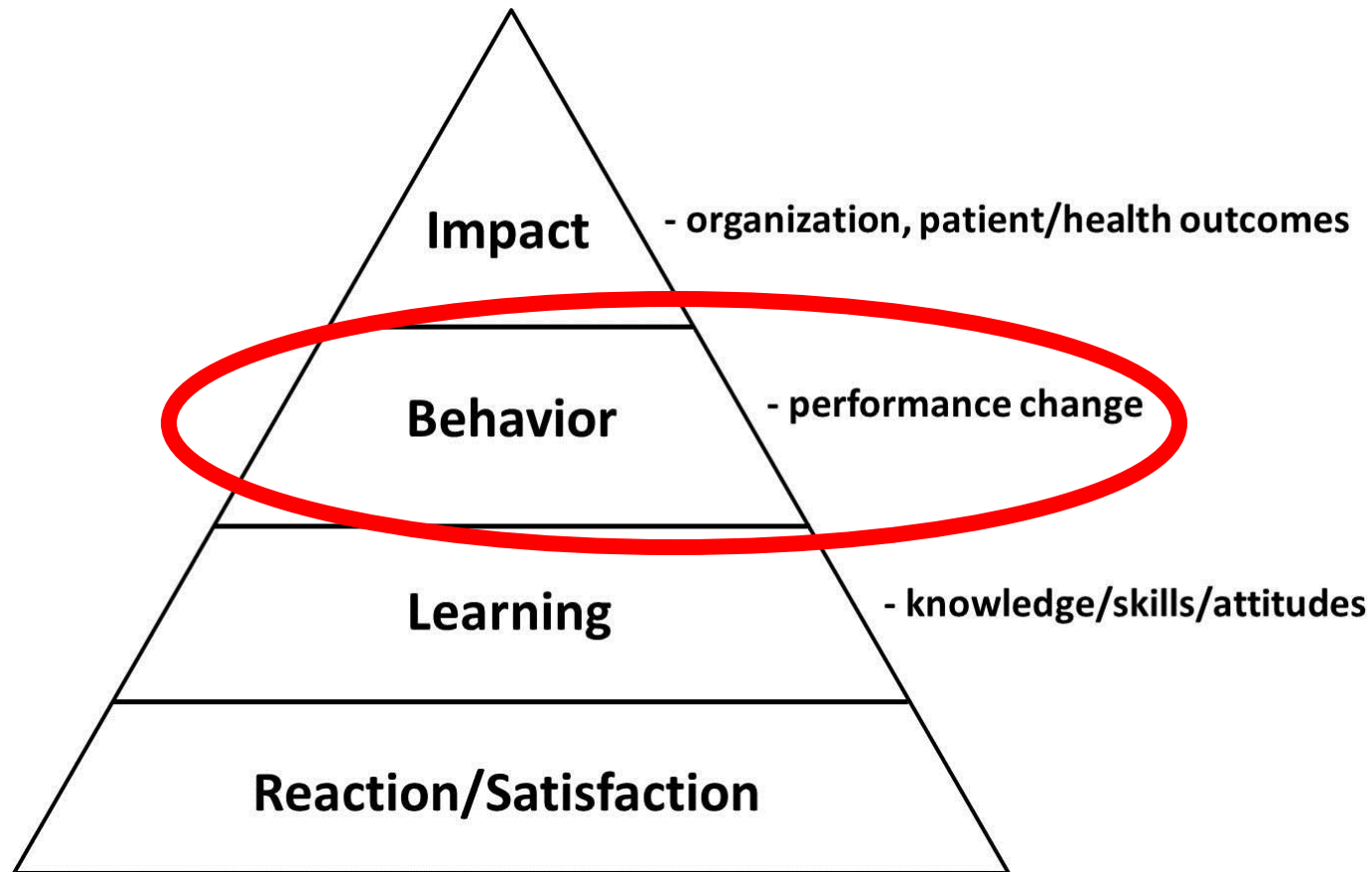
1. Communication
2. Collaboration
3. Roles and Responsibility
4. Collaborative Patient/Client-Family Centred Approach
5. Team Functioning
6. Conflict Management/Resolution

Collaboration: Ability to establish/maintain collaborative working relationships with other providers, patients/clients and families.

1. Establishes collaborative relationships with others in planning and providing patient/client care.
2. Promotes the integration of information from others in planning and providing care for patients/clients.
3. Upon approval of the patient/client or designated decision-maker, ensures that appropriate information is shared with other providers.

Dimensions	Not Observable	Minimal 1	Developing 2	Competent 3	Mastery 4
<i>Collaborative Relationship</i>		<input type="checkbox"/> Does not establish collaborative relationships with others.	<input type="checkbox"/> Occasionally establishes collaborative relationships with others.	<input type="checkbox"/> Frequently establishes collaborative relationships with others.	<input type="checkbox"/> Consistently establishes collaborative relationships with others.
<i>Integration of Information from others</i>		<input type="checkbox"/> Does not integrate information from others in planning and providing patient/client care.	<input type="checkbox"/> Occasionally integrates information from others in planning and providing patient/client care.	<input type="checkbox"/> Frequently integrates information and perspectives from others in planning and providing patient/client care.	<input type="checkbox"/> Consistently integrates information and perspectives from others in planning and providing patient/client care.
<i>Information Sharing</i>		<input type="checkbox"/> Does not share information with other providers.	<input type="checkbox"/> Occasionally shares information with other providers that is useful for the delivery of patient/client care.	<input type="checkbox"/> Frequently shares information with other providers that is useful for the delivery of patient/client care.	<input type="checkbox"/> Consistently shares information with other providers that is useful for the delivery of patient/client care.
		<input type="checkbox"/> Does not seek approval of patient/client or designated decision-maker when information is shared.	<input type="checkbox"/> Occasionally seeks approval of the patient/client or designated decision-maker when information is shared.	<input type="checkbox"/> Frequently seeks approval of the patient/client or designated decision-maker when information is shared.	<input type="checkbox"/> Consistently seeks approval of the patient/client or designated decision-maker when information is shared.
Comments:					





Methodology – Reliability Testing



- **Stage I: Pilot**
- **Stage II: Field Test – Multi Source Feedback**

Pilot Study – Discipline of Anaesthesia



- **Original 31-item ICAR reduced to 17-items**
 - ❖ Face validity assessed by Anaesthesia faculty members
- **Participation**
 - ❖ 24 attending physicians (60% of faculty)
 - ❖ 11 residents (55% of residents).
 - 7 (64%) received at least 3 assessments
 - Range: 3 – 7 raters per resident

Field-test - Multi-Source Feedback

- ICAR was expanded from 4-point scale to a 9-point scale (+ Not Observable)

1	2	3	4	5	6	7	8	9	N/O
Well Below Expected		Below Expected		Expected		Above Expected		Well Above Expected	Not Observable

Communication: Ability to communicate effectively in a respectful and responsive manner with others ("others" includes team members, patient/client, and health providers outside the team).

Resident...										N/O
Communicates with others in a confident, assertive, and respectful manner.	1	2	3	4	5	6	7	8	9	<input type="checkbox"/>
Communicates opinion and pertinent views on patient care with others.	1	2	3	4	5	6	7	8	9	<input type="checkbox"/>
Uses communication strategies (verbal & non-verbal) appropriately in a variety of situations.	1	2	3	4	5	6	7	8	9	<input type="checkbox"/>
Communicates in a logical and structured manner	1	2	3	4	5	6	7	8	9	<input type="checkbox"/>

Field-test - Multi-Source Feedback

Participation:

- **80 Raters:**

	Consented	Completed	Response Rate
Physicians	11	10	90.9%*
Nurses	76	57	75.0%
Allied Health Professionals	18	13	75.2%
Total	105	80	76.2%

- **6 Residents:**

- ❖ 3 – Orthopedic
- ❖ 2 – Internal medicine (one assessed in ICU)
- ❖ 1 – Anesthesia (assessed in ICU)

Internal Consistency Reliability

- Cronbach's Alpha
- > 0.7 is considered suitable reliability within tool

Competency Domain	Cronbach's Alpha	
	Pilot	MSF
Communication (4 items)	.768*	.963*
Collaboration (3 items)	.876*	.950*
Roles and Responsibility (3 items)	.667	.899*
Collaborative Patient/Client – Family Centred (2 items)	.800*	.881*
Team Functioning (2 items)	.708*	.932*
Conflict Management / Resolution (2 items)	.851*	.907*
ICAR (17 items)	.939*	.981*

Proportion of Non-Observable / Missing Data

Item #	Item Category (# in Category)	Pilot (%)	MSF (%)	Difference (%)
17	Conflict Management / Resolution (3)	54.8	26.5	- 28.3
16	Conflict Management / Resolution (2)	25.8	18.7	- 7.1
8	Roles and Responsibility (1)	19.4	16.8	- 2.6
10	Roles and Responsibility (3)	19.4	15.5	- 3.9
15	Conflict Management / Resolution (1)	19.4	8.4	- 11.0
12	Patient/Client – Family Centred (2)	16.1	18.7	+ 2.6
14	Team Functioning (2)	16.1	3.9	- 12.2
11	Patient/Client – Family Centred (1)	12.9	17.4	+ 4.5
9	Roles and Responsibility (2)	9.7	7.1	- 2.6
13	Team Functioning (1)	9.7	5.8	- 3.9
6	Collaboration (2)	6.5	3.2	- 3.3
	Total Missing	13.1	8.8	- 4.3*
	* Significant at $\alpha = 0.05$ (Paired samples t-test)			

Inter-rater Reliability (IRR)

Percent Agreement

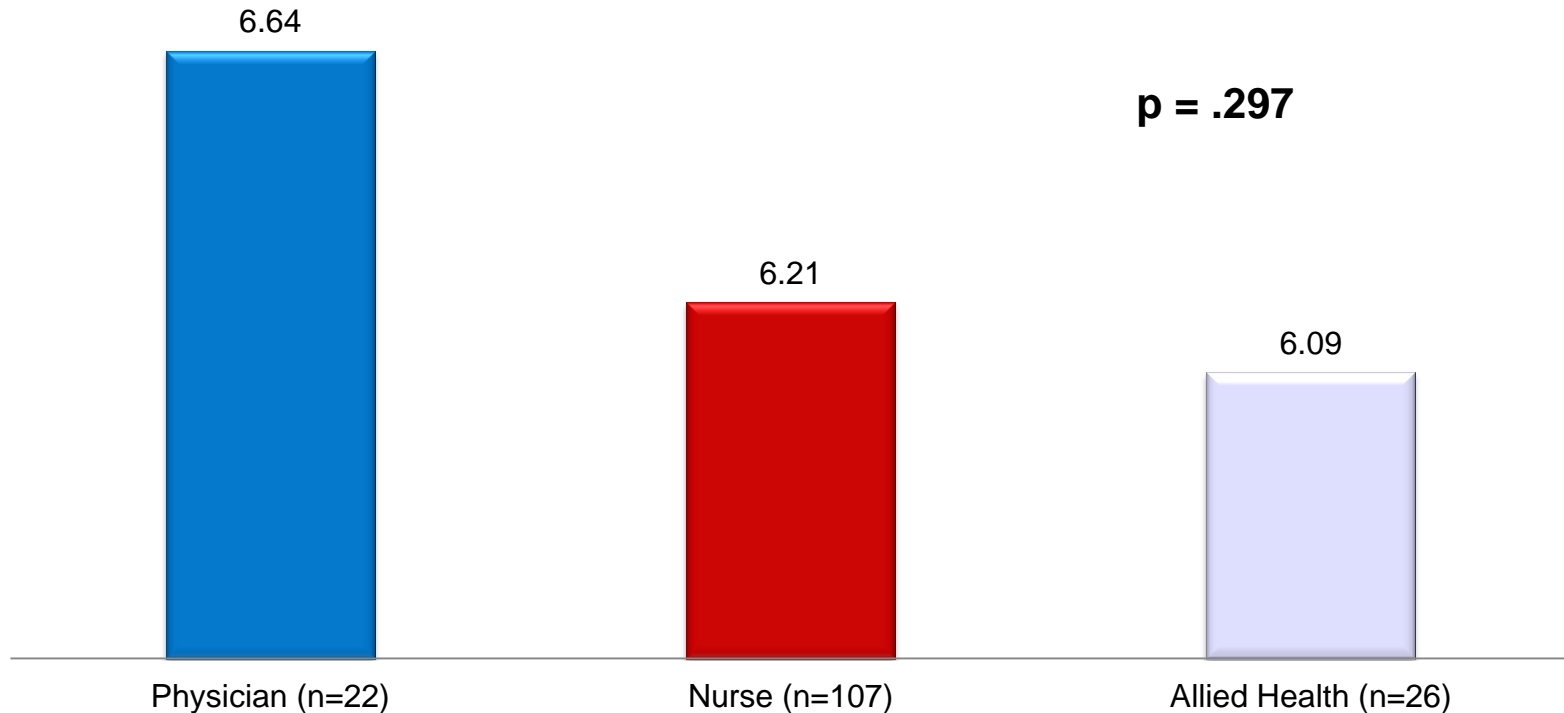
- > 80% considered suitable agreement

Fleiss' Kappa

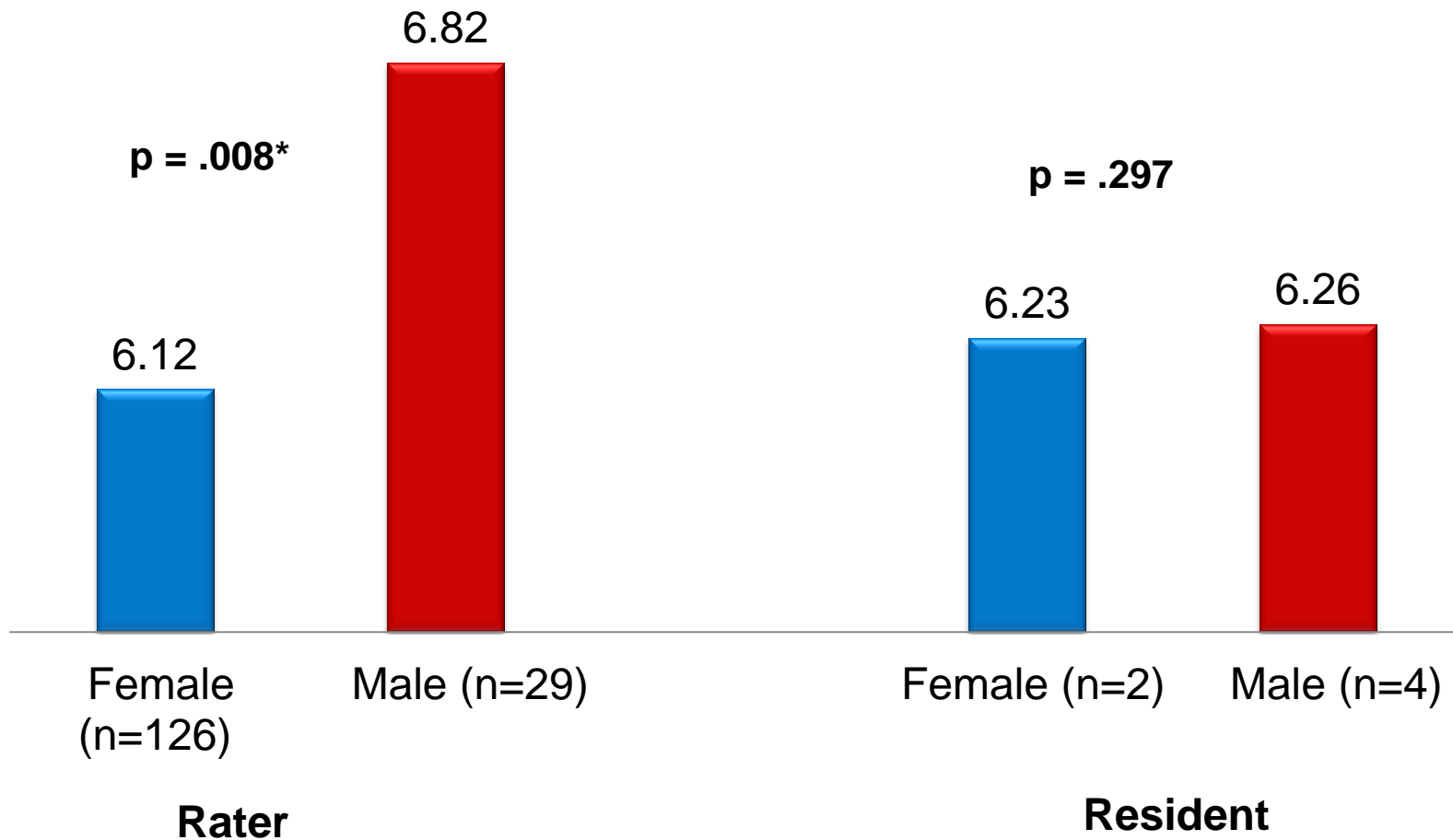
- > 0.7 considered suitable reliability within tool

	Pilot		MSF	
	Value	95% CI	Value	95% CI
Percent Agreement	66.8%	64.5 – 69.2	91.5%	90.3 - 92.7
Fleiss' Kappa	.003	.000 – .038	.000	.000 - .022

One-way ANOVA Between Rater Groups of ICAR Mean Score

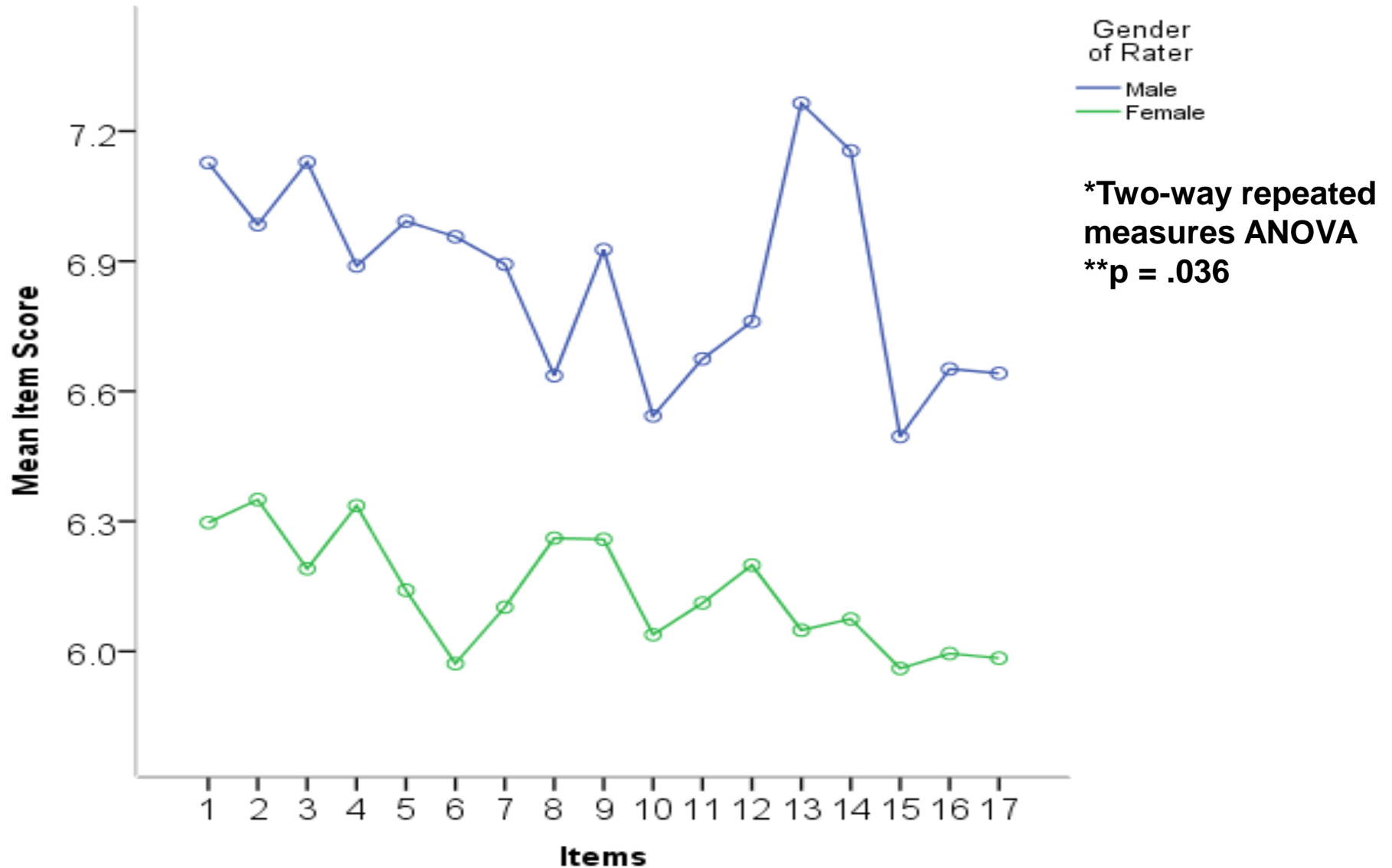


t-tests Between Gender on ICAR Mean Score

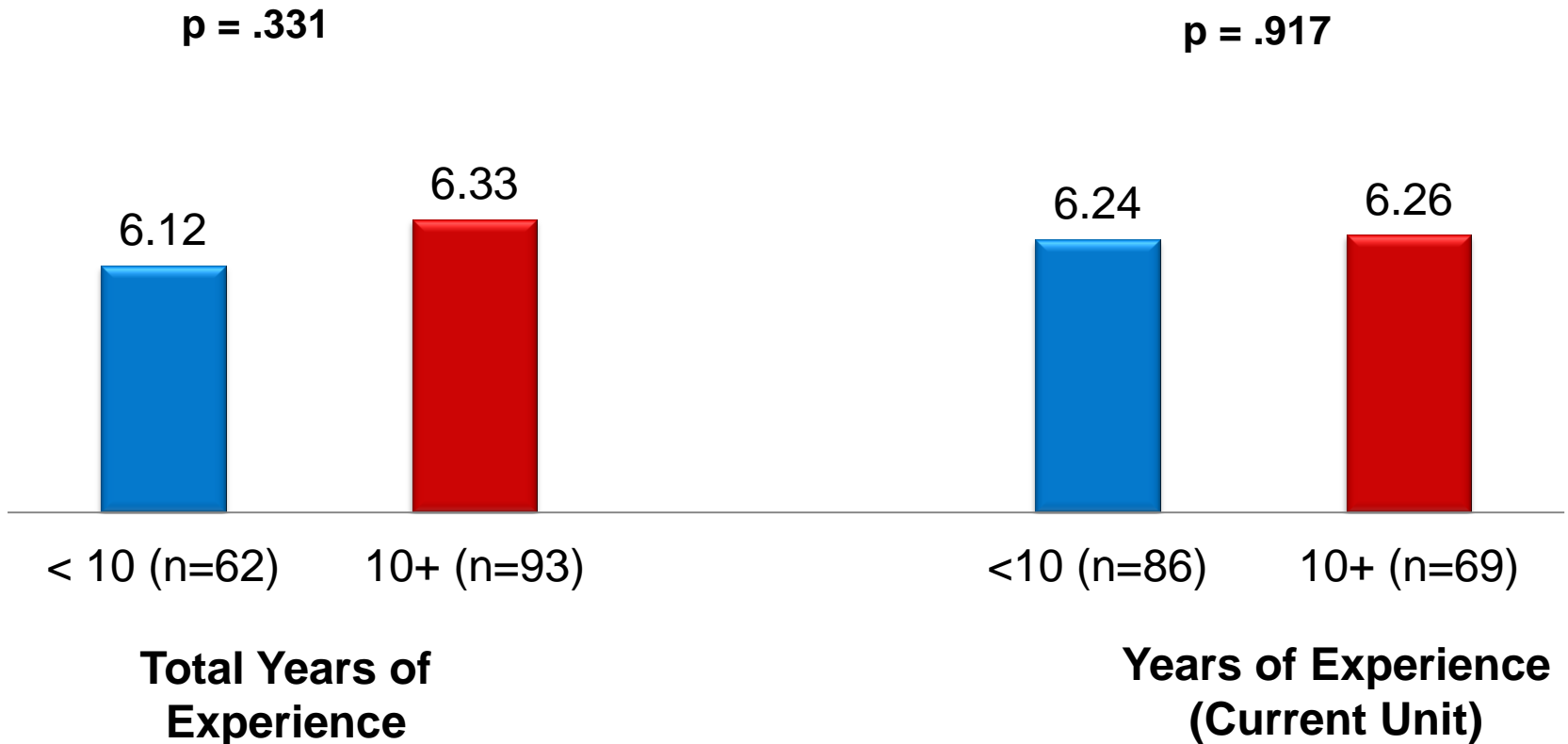


* Significant at $\alpha = 0.05$

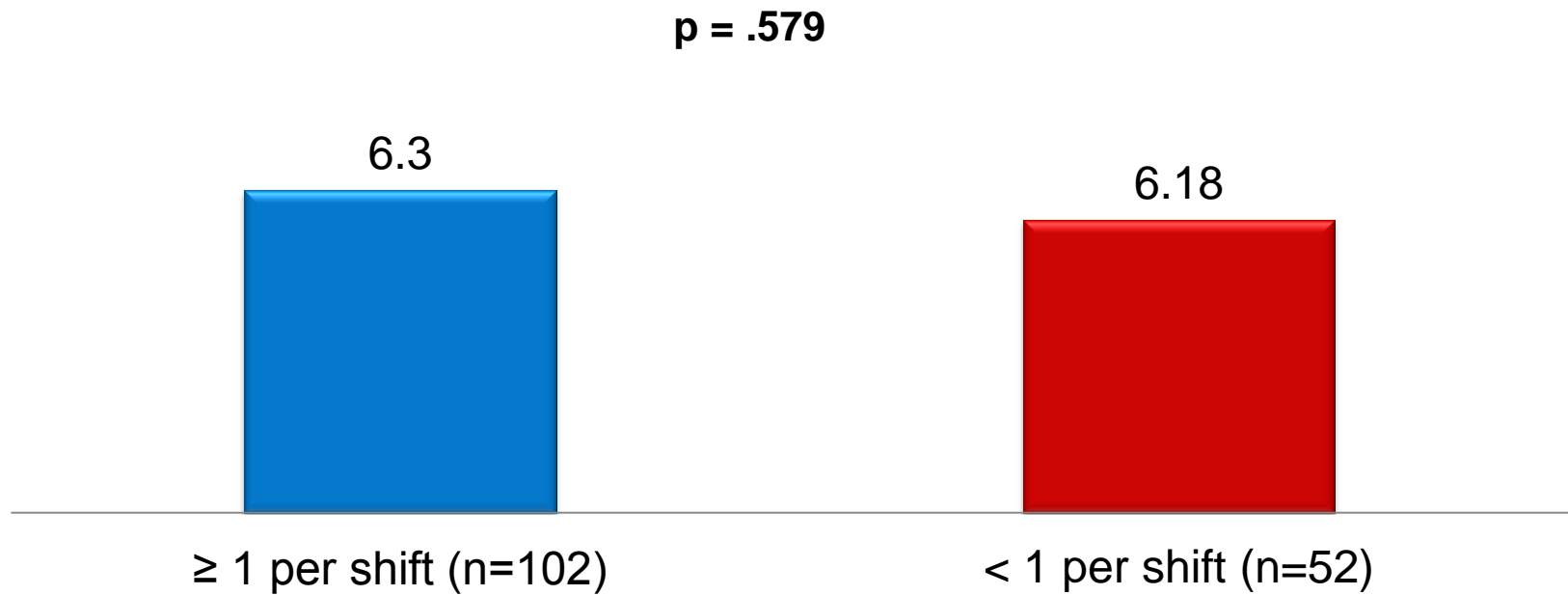
Comparison of Mean Item Score Between Rater Genders



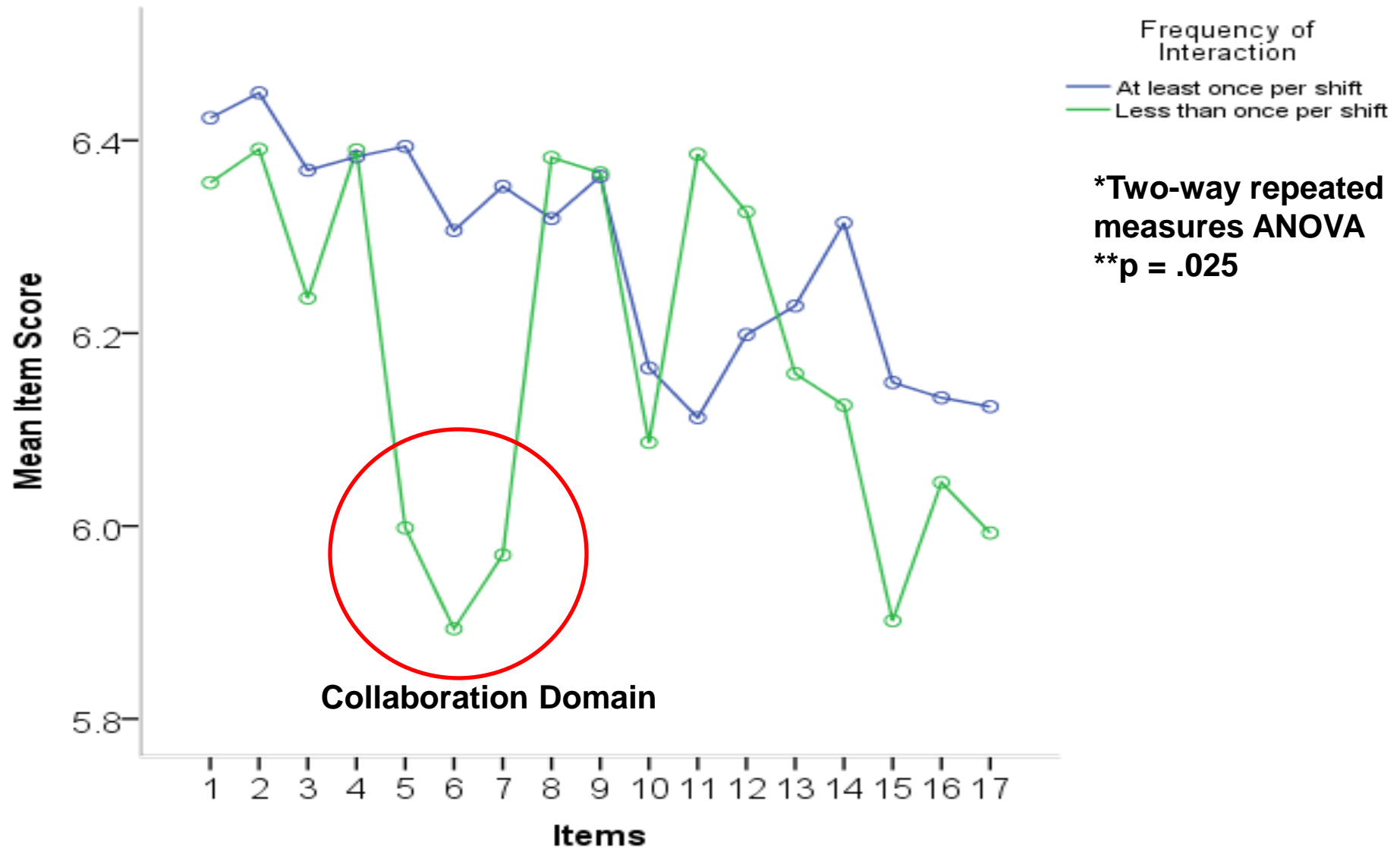
t-tests between Rater Experience on ICAR Mean Score



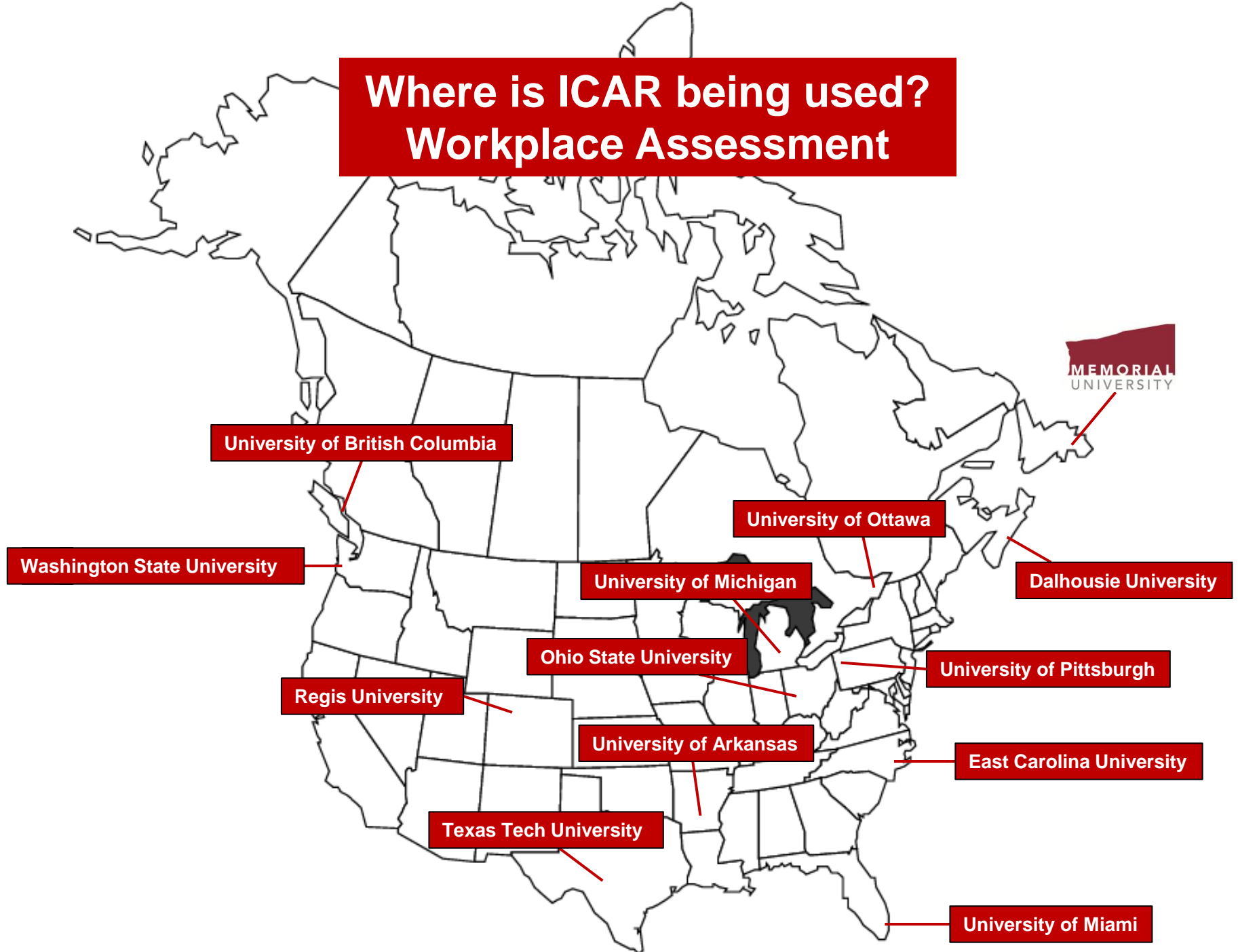
t-test between Rater Interaction Frequency on ICAR Mean Score



Comparison of Mean Item Score Between Interaction Frequency



Where is ICAR being used? Workplace Assessment



http://bit.ly/Rubric

Screenshot of the Memorial University website showing the Faculty of Medicine page.

The browser address bar shows: <http://www.med.mun.ca/CCHPE/Faculty-Resources/Interprofessional-Collaborator-Assessment-Rubric.aspx>

The page header includes navigation links: ABOUT, ALUMNI, CAREERS, BECOME A STUDENT, INTERNATIONAL, PROGRAMS, RESEARCH, CAMPUSES, QUICK LINKS.

The Memorial University logo is displayed on the left, and the text "my.mun / Memorial@home / Self Service" is on the right. A search bar labeled "Search MUN pages" is also present.

The main content area is titled "FACULTY OF MEDICINE" with the tagline "Building a Healthy Tomorrow"™. Below this, a navigation bar lists: Leadership, Admissions, Students, Education, Research, Faculty/Staff, Division/Discipline, Communications.

The page is titled "Centre for Collaborative Health Professional Education".

The left sidebar contains a list of links: Home, About Us, Governing Council, Faculty and Staff, Faculty Scholars, Faculty Associates, Activities, IPE Resources, Teaching Resources for IPE, Health Professions, Health Care Teams, Interprofessional Care Planning, Team Meetings, Interprofessional Collaborator Assessment Rubric (ICAR), IPE Faculty Development.

The main content area displays the "Interprofessional Collaborator Assessment Rubric (ICAR)".

The text states: "The Interprofessional Collaborator Assessment Rubric (ICAR) is intended for use in the assessment of interprofessional collaborator competencies."

Below this, it mentions: "Limited permission to download and reproduce this instrument in its entirety is granted for non-commercial purposes of educational / training activities, scientific or educational advancement. We do, however, require that the following statement appear on all reproductions:"

The citation provided is: Curran et al., (2010). Interprofessional Collaborator Assessment Rubric. Copyright © 2010 by Academic Health Council.

It also states: "Adaptations or modifications to the original ICAR may only be made with the expressed written permission of the creators."

A box contains a small image of the rubric and a list of links: [Interprofessional Collaborator Assessment Rubric \(ICAR\) Synopsis](#), [Interprofessional Collaborator Assessment Rubric \(ICAR\)](#), [Rubrique d'évaluation de la collaboration interprofessionnelle](#), and [Interprofessional Collaborator Assessment Rubric \(Modified\)](#).

At the bottom, it states: "The Interprofessional Collaborator Assessment Rubric is available to view or download in PDF (Acrobat) format. PDF (short for Portable Document Format) documents can be viewed and printed on a variety of different computer platforms, exactly as they were intended to appear."

The Windows taskbar at the bottom shows the time as 3:25 PM on 05/01/2015.

References



- Hayward, M., Curran, V.R., Schulz, H., Curtis, B., Murphy, S. (2014). *Reliability of the Interprofessional Collaborator Assessment Rubric (ICAR) in Multi Source Feedback (MSF) with Post-Graduate Medical Residents*. BMC Medical Education, 14:1049. DOI:10.1186/s12909-014-0279-9.
- Curran, V.R., Casimiro, L., Banfield, V., Hall, P., Lackie, K., Simmons, B., Tremblay, M., Wagner, S.J., Oandasan, I. (2011). *Development and Validation of the Interprofessional Collaborator Assessment Rubric (ICAR)*. Journal of Interprofessional Care, 25, 339-344.
- Curran, V.R., Casimiro, L., Banfield, V., Hall, P., Lackie, K., Simmons, B., Tremblay, M., Wagner, S.J., Oandasan, I. (2008). *Research for Interprofessional Competency-Based Evaluation (RICE)*. Journal of Interprofessional Care, 23(3), 297-300.

Examining Teamwork Skills in Simulated Settings

Amy V. Blue, PhD

Associate Vice President for
Interprofessional Education - Health Sciences
Associate Dean for Educational Affairs
College of Public Health and Health
Professions



Project Collaborators¹

- Donna Kern, MD
- Sarah Shrader, PharmD*
- James Zoller, PhD

Medical University of South Carolina

*South Carolina College of Pharmacy



Background

- How effectively can learners apply their interprofessional skills?
 - Acquisition of knowledge/skills
 - Transfer to practice setting
 - Practice behavior and patient outcomes
- Evidence indicates that team training, including use of health care simulation, is associated with better patient outcomes^{2,3}
- With learners, outcomes less clear...

Study Questions

In a high-fidelity simulated learning environment:

- 1) How are IP team skills associated with clinical outcomes?
- 2) How are attitudes toward IP collaboration associated with clinical outcomes?



Subjects

- 24 IP student teams of 5 participants (N=120)
 - 4th yr medicine, 3rd yr pharmacy, 1st yr physician assistant students
- Newly formed teams – no prior experience working together

Setting

- Teams manage an unstable patient (simulator mannequin) with a gastrointestinal bleed caused by a medical error and medicine interaction⁴
- Team functions in an inpatient rounds setting
 - Patient Interview
 - Physical Exam
 - Order diagnostic tests, labs, medications



Measures

- Clinical Outcomes (COS)
 - Expert faculty determined with modified Delphi
- Attitudes toward IP Collaboration
 - Interdisciplinary Education Perception Scale (IEPS)⁵
- Teamwork skills (TWS)
 - TeamSTEPPS⁶ modified for setting; instrument structure used

Analyses

- Descriptive statistics for demographic, COS, IEPS, and TWS scores
- Regression analysis
 - COS dependent variable
 - IEPS and TWS scores as independent variable

Results - Subjects

- Female (71%)
- Ages 20-25 (56%)
- Caucasian/White (89%)

Results

Measure	Mean	Standard Deviation
Clinical Outcomes	25.22 <i>(maximum=43)</i>	7.44
Teamwork Score	80.75 <i>(maximum=110)</i>	11.13
Total IEPS Score	73.42 <i>(maximum=82)</i>	3.31

Regression Results

Model	B	Std. Error	β	Sig
Constant	-60.276	25.526		.028
TWS	.440	.099	0.659	.000*
IEPS	.680	.333	0.303	.054

* $p < .0001$; $R^2 = .539$

Discussion

- In a simulated clinical setting, students':
 - Attitudes toward IP collaboration were not significant predictors of clinical outcomes
 - Teamwork skills were significant predictors of clinical outcomes

Limitations

- Non-randomized teams and teams unequally distributed amongst professions
- Teamwork scale was a modified version
- Other instruments may have found stronger relationship between attitudes, teamwork and clinical outcomes

Conclusions

- Effective IP teamwork by students is associated with positive clinical outcomes in a simulated clinical environment.
- IP curricular models can improve students' teamwork skills and likely positively affect patient care outcomes.

References

- 1) Shrader S, Kern D, Zoller J, Blue A. (2013) Interprofessional Teamwork Skills as Predictors of Clinical Outcomes in a Simulated Healthcare Setting. J Allied Health. Spring;42(1):e1-6.
- 2) Catchpole, K., Mishra, A., Handa, A., & McCulloch, P. (2008). Teamwork and error in the operating room: analysis of skills and roles. Ann Surg, 247(4), 699-706.
- 3) Siassakos, D., Fox, R., Crofts, J., Hunt, L, Winter, C., & Draycott, T. (2011). The management of a simulated emergency: better teamwork, better performance. Resuscitation, 82(2), 203-6.
- 4) Shrader, S., McRae, L., King, W., Kern, D. (2011). Simulated interprofessional rounding experience in a clinical assessment course. American Journal of Pharmacy Education, 75: Article 61.
- 5) Luecht, R., Madsen, M., Taugher, M., & Petterson, B. (1990). Assessing professional perceptions: design and validation of an interdisciplinary education perception scale. J Allied Health, Spring, 181-91.
- 6) Agency for Healthcare Research and Quality. (2011). Team Performance Observation Tool. Retrieved from <http://www.ahrq.gov/teamsteppstools/instructor/reference/tmpot.htm>.

Thank you!

Please visit us at www.aihc-us.org for more information on future AIHC Webinars.

