BACKGROUND

- The World Health Organization stresses the need for interprofessional education (IPE) as a necessary step in preparing "collaborative practice-ready" healthcare providers. 1
- Challenges exist in developing and implementing IPE activities, such as coordinating the schedules of multiple programs and obtaining appropriate space for the teams to work. 2
- To help overcome these challenges, virtual learning environments have been explored. 3
- In a recent pilot study, we compared web-based (WB) and face-to-face (FTF) interprofessional (IP) student team interactions with standardized patients (SPs), focusing on the competency area of IP communication.4
- IP team communication assessment scores were similar as assessed using validated questionnaires.
- Observable differences in the teams' communication were noted.
- Further exploration of the differences in IP teams' communication using these two platforms was deemed necessary before implementation of future WB encounters.

RESULTS

Opening Sequence
- Both encounters contained an opening sequence that consisted of summon-answer and one-at-a-time rules in addition to anchor statements.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>FTF</th>
<th>WB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length (seconds)</td>
<td>20</td>
<td>60</td>
</tr>
<tr>
<td>Sentence length</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Speaker overlap</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Turn constructional units (TCUs)</td>
<td>5</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 1: Characteristics of Opening Sequences

Turn-taking
- Predominantly signaled non-verbally in both encounter types
- FTF – signaled with a head/tum or eye gaze
- WB – signaled with an extended pause or a smile

Table 2: Smiles during Transition Space

<table>
<thead>
<tr>
<th>Timing of Smiles</th>
<th>FTF</th>
<th>WB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before opening sequence</td>
<td>11</td>
<td>2</td>
</tr>
<tr>
<td>After opening sequence (excluding closing)</td>
<td>0</td>
<td>7</td>
</tr>
</tbody>
</table>

Parties and Alliances
- In both encounters
  - Alliances formed among team members and with the SP
  - Used inclusive words (i.e. "we," "us," "the team"); instead of "I"
  - "I" asked questions related to their professional scope

Power
- Based around patient's five goals, with 3 areas including the length of the opening sequences, number of turn constructional units, signals during opening sequence

Table 4: Power Comparison Between Encounter Types

<table>
<thead>
<tr>
<th>Encounter Type</th>
<th>Reviewer #1</th>
<th>Reviewer #2</th>
<th>Reviewer #3</th>
<th>Overall Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>FTF</td>
<td>10</td>
<td>11</td>
<td>11</td>
<td>10.7</td>
</tr>
<tr>
<td>WB</td>
<td>11</td>
<td>10</td>
<td>10</td>
<td>10.7</td>
</tr>
</tbody>
</table>

Case Rubric
<table>
<thead>
<tr>
<th>Question</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Based on patient's five goals, with 3+ items per goal (maximum possible score 17)</td>
<td>16</td>
</tr>
</tbody>
</table>

Table 5: Case Rubric Scores, by Reviewer

DISCUSSION

- FTF and WB IP teams' communication with a SP
  - Functions within Schramm's field experience model of communication theory
    - Individuals coded and decoded messages effectively as both the receiver and sender used verbal and non-verbal signals
    - Differences between encounter types in the signals for turn-taking
    - Did not appear to be impacted by noise
    - Teams appeared to rely on their shared IP mental model during the encounter
  - Openings sequences
    - Both encounter types contained typical elements of opening sequences, including summon-answer, one-at-a-time rules, and anchor statements.
  - WB opening sequences was 6 times longer than the FTF
  - Possibly due to students not yet having a shared mental model about how to conduct a web-based encounter.

- Effective IP team communication with the SP was achieved in both the WB and FTF encounters.
  - Supported by: Similar case rubric scores for both encounter types
  - Similar IP team communication assessment scores from the patient perspective via the adapted CAT.5
  - In a prior review of literature about telemedicine and doctor-patient communication, 80% of findings favored telemedicine.6 Further research in verbal content analysis was suggested to better understand the communication process.

CONCLUSIONS AND FUTURE DIRECTIONS

- Differences in IP team communication were noted between the WB and FTF SP encounters in areas including the length of the opening sequences, number of turn constructional units, signals for turn-taking, and emergence of a single team leader.
- Overall, both teams appeared to communicate effectively, with minimal, if any, power struggles.
- Additional studies are needed to obtain a more in-depth understanding of IP team communication with a patient (SP) during a WB encounter in order to effectively train students to provide telehealth services.
- Areas to explore include:
  - Differences in web-based platforms
  - Body language of SPs and students and the influence on perceptions of the experience
  - Team hierarchy and power struggles during WB encounters

REFERENCES
4. Fanned Team Theory. 2010.5.6

The authors have no conflicts of interest to disclose.

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A Conversation Analysis of Web-based and Face-to-face Interprofessional Team Communication During a Standardized Patient Encounter

Christine Holland, PhD, PA-C, Kelly A. Lempicki, PharmD, BCPS, Marilyn Hanson, EdD, PhD

• Objective: explore IP teams’ communication during a WB and FTF SP encounters using conversation analysis (CA), focusing on turn-taking, parties, alliances, and power
• Conceptual framework

Wilbur Schramm model of communication

- Sender and receiver + n participants
- Encoding and decoding: verbal and non-verbal way of conveying the message
- Feedback = response and reaction from the receiver back to the sender
- Channel = zoom platform or an oral within proximity of participants
- Feedback: individuals’ line and prior healthcare training (history taking skills, prior exposure to SP encounter), and inclusive or exclusive (roles and responsibilities, perceived stereotypes)
- Noise: stereotypes (shared IP model)
- Noise: outside distractions

- Data source:
  - Two 30-minute recordings of IP student team interactions with a SP (one WB and one FTF)
  - WB team: pharmacy, osteopathic medicine (male), physical therapy
  - WB team: pharmacy, physical therapy (male), occupational therapy
  - Scenario: develop an interprofessional care plan for the next month for a patient who experienced a stroke 2 months prior and was struggling with recovery of physical mobility as well as coping with the loss of a spouse 6 months ago
  - Transcription, coding, and analysis process
    - One investigator systematically transcribed the recordings over a 3-week period.
    - Coding for pauses, overlaps, and silence was then performed following Schramm’s guidelines.
      - Observations of nodding, head-turning, gaze, smiling, and use of inclusive words (i.e. we, us) were also noted and counted.
    - Two investigators then independently reviewed the transcription and coding.
    - Length of the opening sequence for each encounter was noted.
      - The number of turn constructional units (TCUs) for each participant were compared and compared.
    - All investigators also completed a case rubric while viewing the recordings.
    - Analysis
      - Transcriptions and observations were explored to determine whether they illustrated any of the characteristics found in the 3 of Freebody’s six analytic passages selected for analysis: 1) turn-taking, 2) parties and alliances, and 3) power

- This data was then triangulated with the case rubric and conversation assessment test-act (CAT-T) data from the pilot and findings from a review of the literature.
- This project was approved by the Midwestern University and Rosalind Franklin University IRBs.