A Conversation Analysis of Web-based and Face-to-face Interprofessional Team Communication During a Standardized Patient Encouter
Kelly A. Lempicki, PharmD, BCPSa,b; Christine Holland, PhD, PA-Ca,c; Marilyn Hanson, EdDd
aMidwestern University Clinical Skills and Simulation Center; bMidwestern University Chicago College of Pharmacy; cRosalind Franklin University College of Health Professions; dRosalind Franklin University Department of Interprofessional Healthcare Studies

BACKGROUND

- The World Health Organization stresses the need for interprofessional education (IPE) as a necessary step in preparing “collaborative practice-ready” healthcare providers.2
- 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.3
- To help overcome these challenges, virtual learning environments have been explored.4
- 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.5
- IP team communication assessment scores were similar as assessed using validated questionnaires.6
- 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.

METHODS

- 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.

Wilbur Schramm model of communication

- Sender and receiver = IP participants
- Encoding and decoding: verbal and non-verbal way of conveying the message
- Feedback = response and reaction from the receiver back to the sender
- Channels = Platform or set of power/position of participants
- Field of experience = individual’s life and prior healthcare training
- Characteristics found in the 3 of the 7 characteristics of turn-taking, 2) parties and alliances, and the 3) power.
- Participants also noted and counted.
- Two investigators then independently reviewed the recordings over a 3 week period.
- Coding for pauses, overlap and latching was then performed following Sidnell’s guidelines.5
- Observations of nodding, head-turning, gaze, smiling, and use of inclusive words (i.e. we, us) were also noted and counted.

RESULTS

Table 1: Characteristics of Opening Sequences

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>FTF</th>
<th>WB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length (seconds)</td>
<td>20</td>
<td>80</td>
</tr>
<tr>
<td>Sentence latch</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Speaker overlap</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Turn constructional units (TCUs)</td>
<td>SP</td>
<td>10</td>
</tr>
<tr>
<td>DO</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>PT</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>OT</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

Figure 1: Number of Turn Constructional Units (TCUs) per Participant

Figure 2: Pausas during Turn-taking

<table>
<thead>
<tr>
<th>Type of Turn-taking Pause</th>
<th>FTF</th>
<th>WB</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 second or more</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total seconds of all turn-taking pauses</td>
<td>59</td>
<td>64</td>
</tr>
<tr>
<td>Average length of pause per turn-taking (seconds)</td>
<td>2.57</td>
<td>2.94</td>
</tr>
<tr>
<td>2 seconds or more</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total seconds of all turn-taking pauses</td>
<td>20</td>
<td>27</td>
</tr>
<tr>
<td>Average length of pause per turn-taking (seconds)</td>
<td>2.80</td>
<td>3.30</td>
</tr>
</tbody>
</table>

Table 2: Case Rubric Scores, by Reviewer

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

DISCUSSION

- Functions within Schramm’s field experience model of communication theory
  - Individual 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
  - Was not appear to be impacted by noise
  - Teams appeared to rely on their shared IP mental model during the encounter
- Opening 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 5 times longer than the FTF
  - Possibly due to students not yet having a shared mental model about how to conduct a web-based encounter
- Overall, 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-T

- In a prior review of literature about telemedicine and doctor-patient communication, 80% of findings favored telemedicine.4 Further research in verbal content analysis was suggested to better understand the communication process.
- To our knowledge, no studies have been published that qualitatively evaluate IP team communication via web-based platforms.

- Limitations
  - Unable to contact participants after the analysis to verify that our observations from the recordings and observations were explored to determine whether they illustrated any of the findings favored telemedicine.
  - Further research in verbal content analysis was suggested to better understand the communication process.
  - To our knowledge, no studies have been published that qualitatively evaluate IP team communication via web-based platforms.

- 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.
  - Lack of power in the professional composition of the teams
  - Potential for human error in transcription and observation
  - Sample from a single institution

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 via web-based platforms (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 activity
  - Team hierarchy and power struggles during WB encounters

REFERENCES

1. Franklin University Department of Interprofessional Healthcare Studies. A conversation analysis of web-based and face-to-face interprofessional team communication during a standardized patient encounter. Midwestern University Clinical Skills and Simulation Center, Midwestern University Chicago College of Pharmacy, Rosalind Franklin University College of Health Professions, Rosalind Franklin University Department of Interprofessional Healthcare Studies.

The authors have no conflicts of interest to disclose.

Kelly A. Lempicki, PharmD, BCPS

For more information contact Kellly A. Lempicki, PharmD, BCPS

kellyl@midwestern.edu

Permission granted by the Midwestern University and Rosalind Franklin University IRB's.