**P-E-01**

**Research In-Progress**

**Personality-Driven Non-Verbal Communication in Surgical Teams: A Pilot Study of Robotic-Assisted Urology Cases**

Jingkun Wang; Yuyuan Cao; Sohye Lee; Felicia Roberts; Marian Obuseh; Nicholas Anton; and Denny Yu

*Purdue University, West Lafayette, IN*

**Introduction:** The surgeon's non-technical skills (NTS) are crucial, as they significantly influence surgical outcomes. Most research on NTS has focused on verbal communication, yet non-verbal communication—an integral part of surgical team interactions—requires more attention. As the team leader, the surgeon's personality is key in shaping the team's environment. Understanding how specific traits—such as extraversion, agreeableness, conscientiousness, and emotional stability—affect non-verbal cues can offer valuable insights into team dynamics. By examining the surgeon's personality and its influence on non-verbal communication, we aim to enhance team cohesion, minimize misunderstandings, and improve overall surgical performance. This study investigates the impact of the surgeon's personality on non-verbal interactions within the team, contributing to more effective and harmonious surgical practices.

**Methods:** In this pilot study, video recordings of robotic-assisted urology surgeries were collected. Three coders observed the videos to identify non-verbal behaviors (gestures and gaze direction). After independent coding, the coders met to reach a consensus on coding and event identification for each case. The relationship between verbal and non-verbal communication was categorized, with non-verbal communication further classified based on its effect: effective, ineffective, ancillary, repair, or upgrade. The Ten Item Personality Index (TIPI) was used to assess the surgeon's personality in each case.

**Preliminary Results:** Six cases were coded for non-verbal events and TIPI ratings. The figure illustrates the relationship between non-verbal events and TIPI scores. Extraversion and agreeableness were negatively correlated with non-verbal events, while conscientiousness showed a positive correlation. Emotional stability remained unchanged regardless of the frequency of non-verbal events.

**Next Steps:** We will complete non-verbal event coding and personality ratings for all cases and further analyze the relationship between verbal and non-verbal communication and the effectiveness of non-verbal communication versus personality. Statistical tests will be applied to gain a deeper understanding of how a surgeon's personality influences non-verbal behavior.