Abstract Submission: Final Review

NON-VERBAL PATTERNS OF TEACHING COMMUNICATION IN THE OPERATING ROOM Casey Rose MD, Austin Bachar, Jennifer Martin PhD, MFA, An-Lin Cheng PhD, Gary Sutkin MD, University of Missouri - Kansas City

Purpose

Our previous work revealed substantial nonverbal communication in the operating room (OR) between teaching and learning surgeons. Our objective was to study how intraoperative nonverbal communication expressed by resident and attending surgeons is associated with resident autonomy leading up to critical moments. We hypothesized that confident nonverbal communication was more likely to be associated with resident operative autonomy.

Methods

This was a cross-sectional study of surgeon/resident dyads in the OR. We video-recorded 9 surgical cases across various specialties. We used Laban Movement Analysis (LMA), a validated movement analysis tool, to rate kinesic (time, space, plane, and rotation) and vocal (volume, pitch, rate, and inflection) communication leading up to the critical moment. Attending surgeons chose this moment according to an increased risk of iatrogenic damage or steps essential to the outcome. Resident surgeons rated their autonomy using the Zwisch scale. A LMA expert trained a medical student on rating 7 kinesic and 4 vocal variables with 93% agreement. The medical student rated 378 kinesic and 216 vocal variables of residents and attendings across 9 cases. Correlation analysis was used to compare resident self-perceived surgical autonomy and each nonverbal communication variable.

Results

Resident kinesic and vocal variables were not significantly correlated with resident self-perception of autonomy (kinesic Pearson Correlation 0.565, p=0.11; vocal -0.109, p=0.78). Plane 3 (widening vs. narrowing movement) displayed the most positive correlation (0.580, p=0.101,) and rotation (fixed inward vs. outward movement) displayed the most negative (–0.642, p=0.062). Attending kinesic and vocal variables were also not significantly correlated with resident self-perception of autonomy (kinesic 0.070, p=0.858; vocal 0.108, p=0.782).

Conclusions

Although nonverbal communication was not associated with resident self-perception of autonomy, it is important to understand how nonverbal communication is perceived in the OR. Surgical residents should recognize that demonstrating confidence may afford them opportunities in the OR. Surgical attendings should identify residents who display confidence to support their growth. Similarly, recognizing lack of confidence in a resident may suggest the need for remediation. Further studies can analyze how confidence through nonverbal cues can be applied in other health education settings.

A resident (left) is seen receiving forceps from an OR technician (right) during a breast reconstruction. Kinesic rating of this resident receiving forceps with their right hand would indicate a direct, somewhat strong, somewhat quick, somewhat rising, advancing, and somewhat widening movement without rotation.

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