Translating pharmacology into pharmacy practice by enhancing patient-centered communication through AI-driven simulations

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Introduction. Pharmacy students must develop communication skills that enable the effective application of pharmacological knowledge in clinical settings, supporting patient understanding of their therapeutic regimen. At Monash, readiness for practice is partly assessed through OSCE stations, (1) Community pharmacy patient consultations; (2) hospital-based clinical assessment and recommendations; (3) medication counselling. To strengthen these skills and enhance OSCE preparedness, we introduced AI-powered avatar simulations (ATLAS) that allow students to practice translating pharmacological principles into clear and effective communication.

Aims. To evaluate whether AI-driven simulations enhance pharmacy students' ability to effectively communicate clinical decisions to patients, grounded in their pharmacological knowledge.

Methods. ATLAS engagement, measured as total of student communicated word count, was correlated with OSCE performance across different OSCE station types for Australian (n=326) and Malaysian (n=91) students using Spearman's rank correlation. Open-ended student reflections were analysed using a brief thematic approach.

Results. Statistically significant positive correlations were found between ATLAS engagement and overall OSCE performance in both Australian (r=0.21, p<0.01) and Malaysian (r=0.26, p<0.05) cohorts. Station-specific analysis revealed strongest correlations in hospital stations (Australia r=0.19, p<0.001; Malaysia r=0.26, p<0.05) and community pharmacy stations for Australian students (r=0.17, p<0.01). No significant correlations were observed for the medication counselling in either cohort, likely reflecting its exclusion from the ATLAS simulation scenarios. Thematic analysis of student reflections revealed that ATLAS simulations improved confidence, supported challenging patient interactions, and enhanced OSCE preparedness.

Discussion. These findings suggest that AI driven communications simulations could enhance communication competencies that transfer to clinical communication skills. By offering flexible, low-risk practice, these tools complement OSCE preparation and support skills essential for pharmacist prescribing roles.