

Differences in Prescribing Errors Between Electronic Prescribing and Traditional Prescribing among Medical Students: a randomized pilot study

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Abstract

Aims This randomized controlled pilot study aimed to assess the differences in the frequency, type, and severity of prescribing errors made by medical students when assessed in an electronic prescribing system (EPS) compared to traditional prescribing methods (e.g., writing/typing out a prescription). **Methods** Fourth year medical students in the period of November 1st to July 31st, 2023, were asked to participate in this single center prospective, randomized, controlled intervention study. Participants performed a prescribing assessment in either an EPS (intervention group) or in a more traditional prescribing platform (control group). The prescriptions were checked for errors, graded, and categorized. Differences in prescribing errors, error categories, and severity were analyzed. **Results** Out of 334 students, 84 participated in the study. Nearly all participants (98.8%) made one or more prescribing errors, primarily involving inadequate information errors. In the intervention group, more participants made prescribing errors involving the prescribed amount (71.4% vs. 19.0%; $P < 0.01$), but fewer involving administrative errors (2.4% vs. 19.0%; $P = 0.03$). Prescribing-method-specific errors were identified in 4.8% and 40.5% of the intervention and control group, respectively, with significant differences in overlapping errors as well. **Conclusions** This study shows the importance of training electronic prescribing (e-prescribing) competencies in medical curricula, in addition to traditional prescribing methods. It identifies prescribing-method-specific prescribing errors and emphasizes the need for further research to define e-prescribing competencies. Additionally, the need for an accessible real-life-like e-prescribing environment tailored to educators and students is essential for effective learning and incorporation of e-prescribing into medical curricula.

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