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EFFECTIVENESS OF A STRUCTURED ECG TRAINING PROGRAM AMONG MEDICAL STUDENTS AND EARLY-CAREER DOCTORS IN NIGERIA: A PRE-POST QUASI-EXPERIMENTAL STUDY

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Background: Electrocardiogram (ECG) interpretation is an essential clinical skill for diagnosing and managing cardiovascular diseases. However, medical students and early-career doctors frequently demonstrate inadequate ECG knowledge and low confidence in interpretation. This study evaluated the effectiveness of a structured online ECG workshop in improving ECG interpretation knowledge and self-reported confidence among medical students and early-career doctors in Nigeria.

Methods: A one-group pretest–posttest quasi-experimental study was conducted among medical students and early-career doctors who attended at least 75% of a structured online ECG training workshop. Participants completed validated self-administered online questionnaires assessing ECG knowledge and confidence before and immediately after the intervention. Pre- and post-intervention scores were compared using appropriate non-parametric statistical tests, while associations with selected sociodemographic characteristics were also explored.

Results: A total of 424 participants were enrolled, of whom 188 completed both the pre- and post-intervention assessments (attrition rate: 55.7%). Mean ECG knowledge scores increased from 42.6% to 67.9% (25.3% improvement; $p < .001$), while mean confidence scores increased from 39.2% to 72.6% (33.5% improvement; $p < .001$), both with large effect sizes. Participants without prior ECG training and medical students demonstrated significantly greater improvements than their counterparts. Overall satisfaction with the workshop was high (mean score: 4.3 ± 0.8).

Conclusion: Structured online ECG training significantly improved ECG interpretation knowledge and confidence among medical students and early-career doctors in Nigeria. Integrating scalable, interactive ECG workshops into undergraduate and early postgraduate medical education could strengthen ECG competency, support timely clinical decision-making, and enhance cardiovascular care in resource-limited settings.

Keywords: Electrocardiography, Medical education, Clinical competence, Medical students, Early-career doctors