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Does the level of theoretical knowledge in Advance Paediatric Life Support predict the psychomotor skills assessed during the course?

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Introduction - The Advanced Paediatric Life Support (APLS) course is an internationally recognized program designed to enhance physicians' theoretical knowledge and practical competencies in managing paediatric emergencies. This abstract presents preliminary findings from a study titled "Comparison of theoretical knowledge and psychomotor skills during the APLS training course among different categories of medical doctors." The primary objective was to evaluate whether a meaningful association exists between participants' theoretical knowledge and their psychomotor performance during the course.

Methodology - A descriptive cross-sectional study was conducted among doctors attending the APLS program from April to November 2023. Of 117 consenting participants, 108 provided complete datasets for analysis. Theoretical knowledge was assessed using multiple-choice questions (MCQs) before and after the course, while psychomotor performance was measured using a performance index (PI) derived from structured skill evaluation scores. As all datasets were non-normally distributed, non-parametric statistical methods were applied. The Wilcoxon Signed-Rank Test was used to compare theoretical knowledge and psychomotor performance.

Results - Among the 108 participants, 29 (26.9%) work in paediatric or neonatology, 25 (23.1%) in emergency medicine, 36 (33.3%) in anaesthesia or critical care, and 18 (16.8%) in other medical fields. The mean (±SD) pre-course MCQ score was 69.06% (±31.21), post-course MCQ score 84.64% (±7.89), and mean PI score 66.35% (±7.97). The Wilcoxon Signed-Rank Test indicated a statistically significant association between pre-course MCQ scores and PI ($p = 0.002$) and an highly significant correlation between post-course MCQ scores and PI ($p < 0.001$).

Discussion - This analysis demonstrates significant improvement in theoretical knowledge following APLS training and a strong link between knowledge and psychomotor performance. Participants with higher baseline knowledge achieved better practical skills, underscoring the value of pre-course preparation. The post-course correlation highlights that integrating theoretical instruction with practical training reinforces learning, improves skill acquisition, and overall performance in pediatric life support education.