E-learning to improve paediatric parenteral nutrition knowledge? A pilot study in two hospitals.

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Objectives

To assess and compare the impact of a newly created **E-learning module** on the ability of physicians to manage theoretical clinical cases in two hospitals. The E-learning module was focused on **prescription of paediatric parenteral nutrition**.

**Background**

- Education and training may improve prescription of paediatric parenteral nutrition
- Prescription of paediatric parenteral nutrition may be performed by physicians or clinical pharmacists in hospitals
- Differences in knowledge of prescribing and non-prescribing physicians may be expected

**Methods**

- **Setting:** two paediatric university hospitals
  - HUG - Switzerland
  - Prescribing physicians
  - CHUSJ - Sainte-Justine - Canada
  - Non-prescribing physicians

- **Study design:** randomized controlled study in each hospital (Intervention (E-learning) vs Control-group)

  - **Control-group (CG)**
    - Pre-test: Mars 2016
    - Post-test: Avril 2016
  - **Intervention-group (IG)**
    - Pre-test: - E-learning module (45 min)
    - Post-test: - Satisfaction standardized questionnaire

- Pre- and post-test included 3 clinical cases (total score, range 0 to 250 points):
  - Case one: to determine energy intakes
  - Case two: to perform appropriate monitoring
  - Case three: to find errors on a nutrition parenteral prescription

- **Outcome:** scores’ difference between pre- and post-test in both groups (globally and in each hospital)

**Results**

- **65 physicians**
  - **Number of physicians**
    - HUG: 36
    - CHUSJ: 29
  - **Number of physicians in each group**
    - CG =18; IG =18
    - Control =15; IG=14
  - **Mean years of experience (± SD)**
    - CG: 4.0 ± 2.8
    - IG: 3.1 ± 2.6
  - **Pre-test scores (± SD)**
    - CG: 180 ± 29
    - IG: 133 ± 24

→ **Initial knowledge scores significantly higher in HUG**

- **Global analysis (n=65):**
  - Scores’ difference between pre- and post-test

  Mean difference of score improvement
  - CG: 15.1 points, 95% CI [-8.3 to 38.4]; \(p>0.05\)
  - IG: 13.3 points, 95% CI [3.8 to 22.8]; \(p>0.05\)

→ **No significant E-learning impact observed**

- **Analysis in each hospital:**
  - Scores’ difference between pre- and post-test

HUG: \(n=36\)

CHUSJ: \(n=29\)

Mean difference of score improvement
- CG: +8 points, 95% CI [-21 to 37]; \(p>0.05\)
- IG: +24 points, 95% CI [-10.3 to 39]; \(p>0.05\)

→ **No significant E-learning impact observed**

**Conclusion**

- The pilot study did not demonstrate a significant improvement on physicians’ knowledge
- Participants were highly satisfied with the E-learning → further follow-up will be needed to evaluate the assessment of the E-learning

**Global satisfaction**

6. Would you recommend this module to your colleagues?
- Yes
- No

- 100% (n=32) estimated that the E-learning module meet their needs
- 100% (n=32) would recommend it to their colleagues