Using virtual patients and skills laboratory training in a pediatric blended learning scenario

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Introduction Practical skills lab training is increasingly popular in medical education with a high demand on tutors for facilitation and supervision. So far there is little data on the impact of different modalities of cognitive preparation for such training. Preparation therefore is generally through paper handouts or instructor introduction and demonstration which cost valuable training time. The objective of this study was to evaluate whether virtual patients (VPs) are a feasible and effective tool for skills lab preparation from the students and teacher perspective.

Methods Pediatric skills lab training was introduced in 2009 to our faculty. The training covers relevant pediatric procedural skills (lumbar and bladder puncture, pediatric basic life support). Therefore blended VP scenarios have been created presenting typical cases pertinent to each procedure enhanced through multimedia.

Students' opinions (n=117) were surveyed using a published evaluation tool kit in the fields of VP design and curricular integration with the skills training. We additionally asked our tutors about their perception of the attending students. Answers were given on a 5-point Likert Scale from 1 (strongly disagree) to 5 (strongly agree). Questions were clustered into: see results.

Results

Curricular integration questionnaire items
- Teaching presence (11 items; design of teaching sequence, provided expertise, tutorial support)
- Cognitive preparation (3 items; focus on practical training, efficient utilization of time)
- Social presence (3 items; learning atmosphere, ability to project yourself)
- Learning effect (2 items; learning success by combination of VP and skills lab)
- Overall judgement (1 item)

VP design questionnaire items
- Authenticity (2 items; real life similarity)
- Professional approach (3 items; decision making and reasoning)
- Coaching (4 items; advises, feedback and media enhancement)
- Learning effect (2 items; preparation for real life patients)
- Overall judgement (1 item)

In their comments students specifically valued the multimedia-based clarification of procedures. Tutors indicated that the VP cases prepared students well for the skills lab training, allowing an efficient use of time in the training.

Conclusion Our results indicate that virtual patients offer an enjoyable and effective tool to prepare students for skills training. Compared to standard preparation (text books, handouts etc.) virtual patients offer customization of provided information and enhance it with interactivity and multimedia support. By being cognitively prepared, time can be used more efficiently in the skills lab.