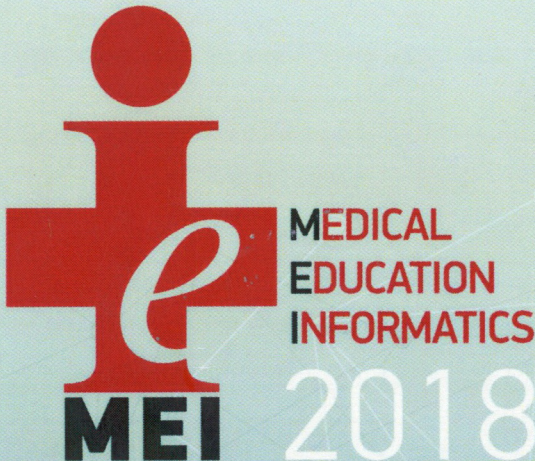


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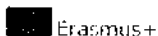
# 3<sup>rd</sup> International Conference on Medical Education Informatics

CONFERENCE PROGRAMME &  
BOOK of ABSTRACTS



Leeds | UK  
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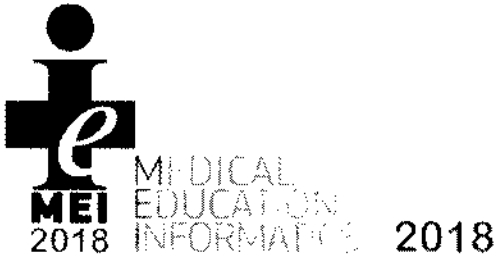
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*of*

**3<sup>rd</sup> International Conference on  
Medical Education Informatics**



**September 06-07, 2018**

**Leeds Institute of Medical Education, School of Medicine,  
University of Leeds, Leeds, UK**

**Results of implementation of D-PBL with Virtual Patients in the frames of TAME: Training Against Medical Errors Project realization in Surgery**

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**Introduction.** Alongside the traditional methods of teaching, there is a number of modern innovative methods of students training. D-PBL (Decision Problem-Based Learning) with the use of Virtual Patients is an upcoming trend in the development of medical education.

The aim of the research is to identify the results of implementation of D-PBL with Virtual Patients and medical errors.

**Materials and methods.** An innovative training methodology was introduced in the frames of the TAME Project (Erasmus+561583-EPP-I-2015-I-KZ-EPPKA2-CBHE-JP (2015-2944/001-001) realization. This approach allows teaching students on medical errors in Surgery during the diagnostics and treatment of the diseases. For the project realization during 2016-2018 academic years the curriculum was modernized, an elective course (120 hours) for 32 6-year students (4 sub-groups, 8 students in each sub-group) of the Medical Faculty No1 (General Medicine) was implemented. All students had practical D-PBL classes based on branch cases (Virtual Patients). Other 12 6-year students were taught traditionally and formed a control group. The statistical analysis was conducted on the PC using the students' database (both branch and control groups) in the software application «STATISTICA® for Windows 6. 0» (StatSoft Inc., № AXXR712D833214FAN5). A non-parametric statistical method - Mann-Whitney U test (for quantitative attributes) - was used to assess the validity of the difference between two independent samples.

**Results.** For the Project realization and D-PBL tutorials a database of Virtual Patients (VP) with medical errors in Surgery was created for the first time at ZSMU. VP is an interactive electronic simulation of the real clinical scenarios developed to teach, train and assess the students' knowledge using the platform OpenLabyrinth. The tutorials were performed during 6 weeks, incl. 6 hours of non-stop practical PBL classes (with a tutor), 3 hours for lectures (1.5 hour each lecture) and time for independent work. Before the tutorials all students were pre-assessed (36 general questions on surgery) to define the initial level of knowledge on Surgery. The average rate is 56,42%.

Three months after the tutorials on-line evaluation of students' knowledge was conducted to identify the sustainability of knowledge on Surgery after a period of time. For this reason, 36 questions were created (6 questions per one case): 2 single questions for finding the best answer directly related to a case; 2 single questions for finding the right answer related to a

disease; 2 open questions connected with the disease (on diagnostics or management strategy, 1-2 word answer needed). The results of the assessment (65.34%) were reliably higher ( $p < 0,001$ ) than the results of the pre-assessment (56,42%), and higher than the results of the assessment of students of the control group (52%).

The results of the State Licensing Examination KROK-2 and the rate value of the correct answers of the sub-test "Surgical profile" of the students, who were taught according to the D-PBL training methodology with VPs and medical errors, were also taken into consideration. The result of the State Licensing Examination KROK-2 had only the tendency ( $p > 0,05$ ) to the highest result of the control group and measures up to respectively (79,99%) against (77,73%). However, the result of the sub-test "Surgical profile" was (80,98%) and was higher ( $p < 0,05$ ) than the control group's results (75,21%).

Conclusions: the training in safe environment according to the D-PBL methodology with Virtual Patients and medical errors contributed to knowledge improvement on the discipline ( $p < 0,01$ ) and results improving in the sub-test "Surgical profile" of the State Licensing Examination KROK-2 ( $p < 0,05$ ) in the comparison with the control group; it will become the basis for avoiding medical errors, limiting harm and improving overall health-care safety.