PROPAIDEUTIKÓS

The board game that helps medical students gain theoretical background for practical skills learning

INTRODUCTION

For the last five years, a peer-teaching based subject Selected topics and Novelties in Propaedeutics has been offered to year-3 medical students at Faculty of Medicine, University of Maribor. During this subject, different practical skills (PS) are taught: venipuncture, blood pressure measurement, rectal examination, intramuscular and subcutaneous injection, arterial puncture, intravenous cannulation and urinary catheterization. Beside the performance of PS, the students have to possess some theoretical knowledge about these skills. In order to improve their knowledge in an entertaining way, we developed a board game.

METHODS

Propaideutikós is a game, throughout which the player answers a series of open-type questions regarding PS. We carried out a prospective study at the Clinical Skills Laboratory at our facility in March 2016. The study included 20 students, which were randomly divided into two groups – the test group and the control group. In the beginning, all students took a 10-question multiple-choice test with predefined number of correct answers. After the test, both groups were asked to study the related subjects in the textbook over the next 4 days. In addition, the test group played a game of Propaideutikós. Afterwards both groups took the final test. Statistical analysis was performed using SPSS Statistics program. Statistical significance was set at p<0.05.

RESULTS

The mean score on the first test was 6.0±1.3/10 for the control group and 6.6±1.5/10 for the test group. The mean score on the final test was 6.0±1.3/10 for the control group and 8.7±1.2/10 for the test group. Mann-Whitney test for independent samples showed statistically significant difference between both groups for the final test (p=0.004), but not for the first test (p=0.295). Related samples Wilcoxon signed rank test showed statistically significant increase in test score for the test group (p=0.027), but not for the control group (p=0.142).

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<tr>
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<th>Test group</th>
<th>Control group</th>
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<tbody>
<tr>
<td></td>
<td>First test</td>
<td>Final test</td>
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<tr>
<td>Number of</td>
<td>9</td>
<td>11</td>
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<tr>
<td>Participants</td>
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<tr>
<td>Mean score</td>
<td>6.0/10</td>
<td>6.0/10</td>
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<tr>
<td>Standard deviation</td>
<td>1.3</td>
<td>1.2</td>
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<td>Minimum</td>
<td>4.0</td>
<td>7.0</td>
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<tr>
<td>Maximum</td>
<td>9.0</td>
<td>10.0</td>
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Table 1: Comparison of the results in both groups.

Discussion

According to our results, students in the test group performed significantly better than students in the control group. However, the small improvement in the results of the control group may be due to the fact that students did not take enough time to prepare for the final test.

CONCLUSION

Propaideutikós proved to be a way to improve the theoretical knowledge of students and could be used as an additional tool to peer teaching. Contrary to the traditional learning of theory students enjoyed the learning process through the game. This could explain why their results were significantly better than those of the control group.
PROPAIDEUTIKÓS - a board game that helps medical students gain theoretical background for practical skills learning

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For the last five years, a peer-teaching based subject Selected Topics and Novelties in Propaedeutics is offered to year-3 medical students at Faculty of Medicine, University of Maribor, during which different practical skills (PS) are taught. Beside the performance of PS, students have to possess some theoretical knowledge about these skills. In order to improve their knowledge in an entertaining way, we developed a board game.

Propaideutikós is a game, throughout which the player answers a series of open-type questions regarding PS [1]. The right answer allows the player to move forward on the board and earn different colours of trophies. The five colours of trophies represent different categories of questions (RED: venepuncture and blood pressure measurement; YELLOW: urinary catheterization, arterial puncture and rectal examination; GREEN: infusion set-up and ultrasound examination of the abdomen; BLUE: intramuscular and subcutaneous injection; TURQUOISE: cardiopulmonary resuscitation and intravenous cannulation). The goal of the game is to earn two trophies of each colour and get to the finish line. In this way, we ensure that students cover theoretical background of every clinical skill that is taught during the subject.

Studies have found out that knowledge gained through game-based learning can be compared to traditional ways of learning. What is more, the educational experience is more entertaining for students and the interactivity and teamwork involved in the board game improve communication skills and cooperation between students [2]. Active learning was also shown to improve student examination performance especially when used in small groups [3].

Using games as a teaching method in medicine appears to be an effective way to facilitate learning theoretical knowledge about PS. In our presentation, we will describe the principles of Propaideutikós board game and present the first results of its use and students’ satisfaction with it.

References: