Trakia Journal of Sciences, Vol. 8, Suppl. 2, pp 374-380, 2010

Available online at:
http://www.uni-sz.bg

ISSN 1313-7050 (print)
ISSN 1313-3551 (online)

INTRODUCTION AND APPROVAL OF INNOVATIVE TECHNOLOGIES IN TEACHING SOME SPECIALIZED COURSES FROM THE CURRICULUM OF THE PROFESSIONAL BACHELOR DEGREE "PHYSICAL THERAPIST" AT THE MEDICAL COLLEGE, STARA ZAGORA

К. Kostov[1], I. Koleva[2], R. Paskaleva[1*], H. Milcheva[3], R. Yoshinov[4]

[1]Medical College, Trakia University, Stara Zagora
[2] Department of Physical Medicine, Rehabilitation, Ergotherapy and Sport, Medical University, Pleven
[3]Department of Healthcare, Faculty of Medicine, Trakia University, Stara Zagora
[4] Laboratory of Telematics, Bulgarian Academy of Sciences, Sofia

ABSTRACT
The training of students, majoring in physical therapy at the Medical College is carried out according to a completely renovated process of tuition, optimal for contemporary needs of clinical practice and conforming to the specific conditions at the Medical College, Stara Zagora, individually adjusted according to wishes and the potential of students and aimed to achieve the best possible results with regard to quality of training.

Key words: training, clinical practice, best result, quality of training

INTRODUCTION

The dynamically changing reality [the Health 21 WHO European region policy and the membership of Bulgaria in the EC] present new and complicated challenges to daily practical activities. The requirement for continuously improvement of quality becomes more and more imperative and it predetermines the philosophy, methods and the worldview of each organization for quality management, and hence, for creation of prerequisites for its constant progress. Throughout this quality improvement process, the so-called Deming's PDCA cycle *(Plan –> Do –> Check –> Act = PDCA)* is applied, based on the concept that every product or service, including those in the sphere of education and health, should be regarded as a process subject to a step-by-step improvement [1]. The final purpose is perfection-aimed development of the respective organization. In ideal models the following achievements are present: quality of the structure, quality of processes, quality of results, a sufficient number of well-motivated staff, creation of better prerequisites, excellent management, quality certificate. The process is evaluation according to criteria of the European Model of Excellence comprising three consecutive levels: level for beginners (committed to excellence) –> *intermediate level средно ниво* (recognized for excellence) –> *finalists* (European excellence award) [2].

Rehabilitation according to the WHO definition is the utilization of all means directed towards reduction of the degree of disability and to train people with permanent disability to achieve an optimal social integration. Rehabilitation is a complex of joined and coordinated medical social, educational and professional activities in people disabled by illness or other injuries, aimed at attaining as best as possible physical, psychic and occupational ability. Thus, the major divisions of rehabilitation are medical-psychological, occupational-professional, and social-juridical rehabilitation. The contemporary concepts for the rehabilitation define it as a functional therapy based upon a precise functional evaluation. This is exactly the kind of rehabilitation that we are training our students for [3].

The training of students at the Medical College is Stara Zagora is organized and performed according to all state requirements, EC standards and the current reality of health reform needs. The curricula of majors are

***Correspondence to:** *R . Paskaleva, Medical College, Trakia University, 6000 Stara Zagora, e-mail: ruska64@abv.bg*

compatible with uniform state requirements and the Higher Education Act, as well as with modern routine clinical practice requests [4].

The training of students at the Medical College should conform to public health system standards and health reform with main priorities directed towards: good theoretical and practical training, formation of various skills for the future activities, critical thinking development, formation of a patient-oriented attitude with emphasis on holistic approach, including a higher level of consciousness and relationship ethics [5].

There are specific requirements to the professional training (theoretical knowledge, practical skills, competences) of the different staff categories. The physical therapist is responsible for the specific performance of the complex physical therapeutical and rehabilitation programme. He should possess additional skills such as ability to perform some specific techniques (proprioceptive neuromuscular facilitation, mobilizations, reflecting massage, manual lymphatic drainage) [3].

The principal aim of our long-term work has always been the improvement of students' training quality and the adjustment of majors taught at the Medical College in Stara Zagora to European standards.

In this survey, the main goal was to determine the relationship between the introduction of contemporary methods in learning, the attendance of lectures and practical exercises and the evaluation made by students from the physical therapy major for the level of their theoretical and practical training.

MATERIAL AND METHODS

All students from the physical therapy major at the Medical College, Stara Zagora were included in the study. In this report, we present data from the answers of 40 students in physical therapy (20 third-year students, fall 2008 and 20 third-year students fall 2011). The survey was carried out anonymously using closed questions test. On the basis of systemic literature analysis and the questionnaire surveys performed for many years, the academic plan of the Physical therapy major and the curricula of kinesitherapy (KT), ergotherapy (ET) and therapeutic massage (TM) have been updated by introduction of modern concepts (functional evaluation, patient training in everyday skills, ergotherapy, art therapy etc.), improvement of visual-aided learning (multimedia presentation of teaching materials), introduction of student evaluation quizzes (current control and at the end of semester) as well as with increasing the share of practical training and inclusion of individual coursework assignments. Questionnaire surveys were performed prior to and after the update of curricula in KT, ET and TM. Data were statistically processed by ANOVA and non-parametric correlation analysis (Wilcoxon rank test), by means of SPSS statistical software. Differences were considered statistically significant at the $P<0.05$ level.

RESULTS AND ANALYSIS

Table 1 and **Fig. 1** present students' general evaluation of training quality of specialized courses.

Table 1. *Student's general evaluation of the quality of training in specialized course (years 2008 and 2010)*

Quality of training assessed as:	2008		2010	
	Number	Relative share, %	Number	Relative share, %
Excellent	13	65 %	17	85 %
Good	6	30 %	3	15 %
Satisfactory	1	5 %	0	0%
Poor	0	0%	0	0%

It should be noted that student's opinion is very important with regard to their proper training, for updating the academic plan of the Physical therapy major and improvement of curricula of special courses – KT, ET, TM **(Table 1, Fig. 1).**

The quality of training from both theoretical and practical point of view is also of particular significance for the future professional realization of physical therapists.

The quality of training at the Medical College in Stara Zagora depends highly on the theoretical and practical training level.

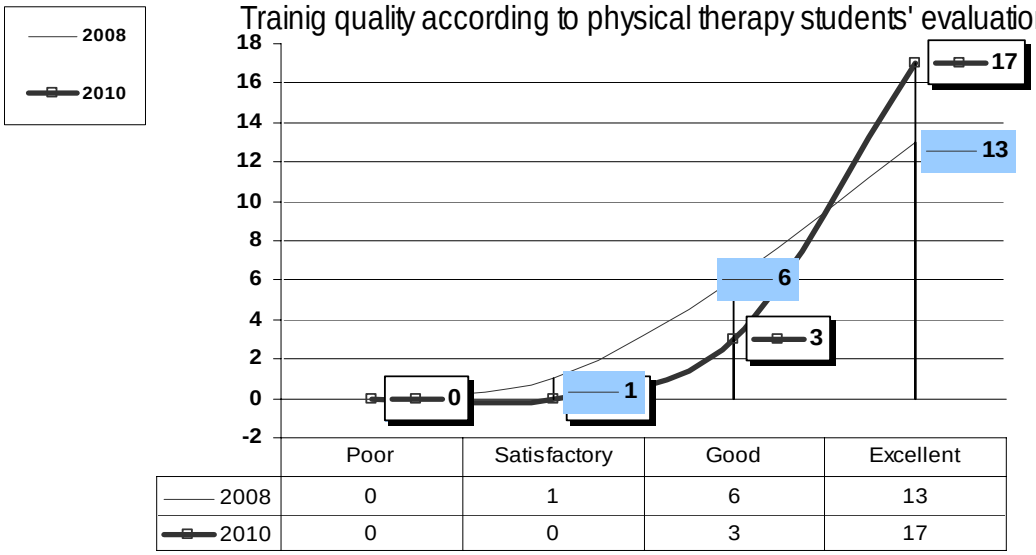

Fig. 1. Change in the quality of physical therapy students according to their evaluation prior to and after the update of curricula

Table 2 and 3 present the answers to questions about students' satisfaction with the theoretical and practical training, respectively. The data are also depicted on **figures 2 and 3.**

Table 2. *Contentment of students with the theoretical knowledge provided by KT, ET and TM curricula prior to and after their update*

Answers	2008		2010	
	Number	Relative share, %	Number	Relative share, %
Yes	12	60 %	18	90 %
No	4	20 %	0	0 %
Don't know	4	20 %	2	10 %

The theoretical knowledge provided by specialized courses (KT, ET, TM) is the core of professional realization of students and the background of professional skills of future physical therapists. After the update of the academic plan of the major and improvement of curricula content of these courses, a statistically significant increase in student contentment with theoretical knowledge was observed – the "yes, I am satisfied" answers increased from 60 % in 2008 to 90% in 2010. Prior to the update, 20% of students were not satisfied with curricula whereas after the update, those responding with "no, I am not satisfied" were practically reduced to zero. The number of "diplomatic" students and those without opinion on the subject has also decreased twice.

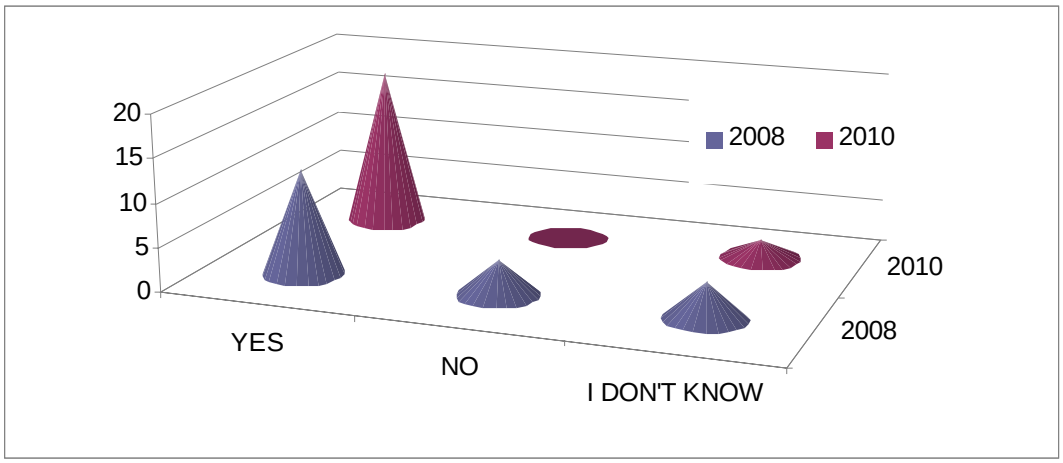

Fig. 2. Contentment of students with the theoretical knowledge provided by KT, ET and TM courses prior to (2008) and after (2010) curricula update.

The good theoretical knowledge is the basis for the adequate application of practical skills in clinical rehabilitation practice as well as for training physical therapists as members of the multidisciplinary rehabilitation team.

Table 3. *Contentment of students with the practical skills provided by KT, ET and TM curricula prior to and after their update*

Answers	**2008**		**2010**	
	Number	**Relative share, %**	**Number**	**Relative share, %**
Yes	15	75 %	18	90 %
No	2	10 %	1	5 %
Don't know	3	15 %	1	5 %

With regard to the practical training, the situation was almost identical with the theoretical tuition **(Table 3)**. As seen from Fig. 3, 75% of respondents were satisfied with practical training provided by curricula of special courses prior to their update.

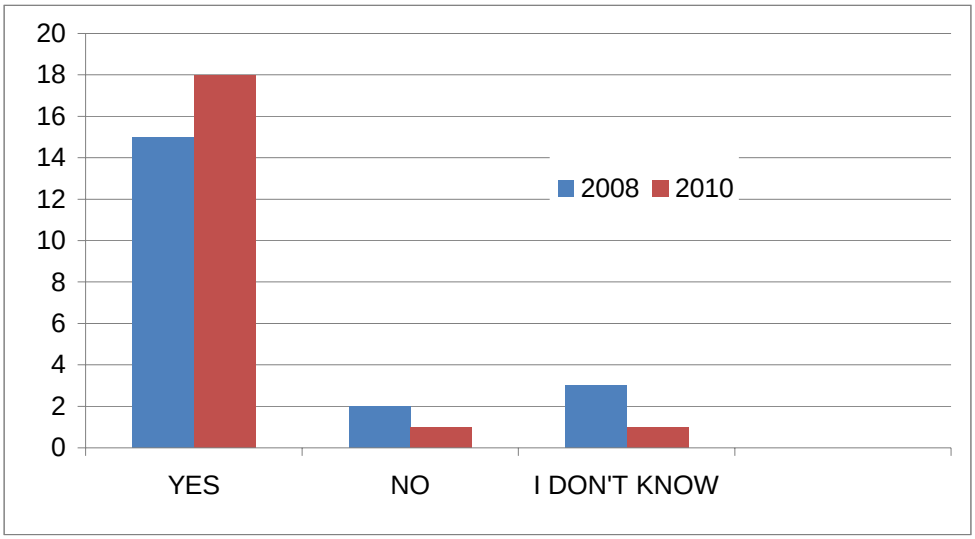

Fig. 3. Contentment of students with the practical knowledge provided by KT, ET and TM courses prior to (2008) and after (2010) curricula update.

After the update of curricula, 90% of respondents were contented from the training. The students are fully aware about how significant the practical training is, as they allow they to develop both practical skills and critical thinking in a conditionally real setting. Furthermore, this increases the quality level of the real clinical practice and guarantees an efficient performance during the summer and pregraduation trainings.

The relationship between the update of curricula of the respective courses from one side, and the contentment of students and the attendance at lectures and practical training sessions deserves further attention. The following trends were observed:

- In 2008, 60% of students were satisfied with the theoretical training, whereas in 2010 they are already 90%. In 2008 65% of students have attended all lectures, and 15% have attended 75% of lectures. In 2010, 90% have attended all lectures and 5% were those attending ¾ of them **(Table 4, Fig. 4)**.
- In 2008, 20% of students were not satisfied with the level of theoretical knowledge, whereas 10% of them expressed discontent with practical training. From them, 5% visited only ¼ of lecture hours and another 5% have entirely missed lectures.
- In 2010, there were no students dissatisfied from the theory provided, one student (5%) has not accepted, and another one (5%) was frustrated with the practical training (the same student has omitted 75% of practical sessions according to individual questionnaires). The attendance rate of lectures was proportionate: 90% have attended all lectures; 5% - 75% of them and another 5% - half of lectures. On examinations, there were no students "unfamiliar" to instructors.

Table 4. *Attendance of KT, ET and TM lectures by students – prior to and after curricula update.*

Attendance to lectures	2008		2010	
	Number	Relative share, %	Number	Relative share, %
All lecture hours	13	65 %	18	90 %
75%	3	15 %	1	5 %
50%	2	10 %	1	5 %
25%	1	5 %	0	0%
0%	1	5 %	0	0 %

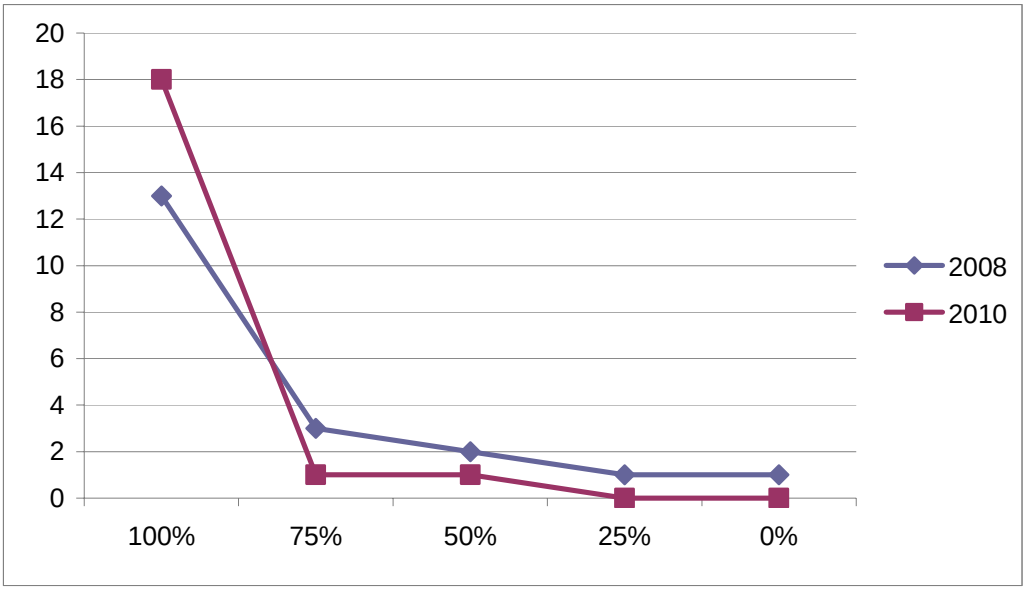

Fig 4. Attendance of KT, ET and TM lectures by students – prior to and after curricula update.

- In 2008, 10% of students were not content with the practical training level. From all students, 10% visited only ¼ of practical sessions and 10% have attended no practical sessions at all?!

Table 5. *Attendance of KT, ET and TM practical training sessions by students – prior to and after curricula update.*

Attendance to practical training sessions	2008		2010	
	Number	Relative share, %		Number
100 %	13	65 %	18	90 %
75 %	2	10 %	1	5 %
50 %	1	5 %	1	5 %
25 %	2	10 %	-	-
0 %	2	10 %	-	-

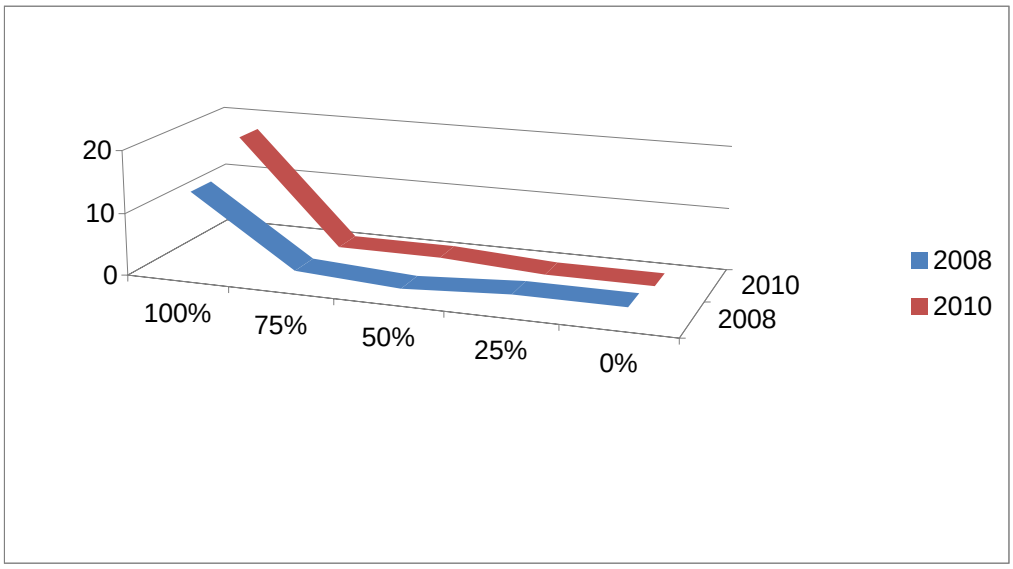

Fig. 5. Attendance of KT, ET and TM practical training sessions by students – prior to and after curricula update.

DISCUSSION AND CONCLUSIONS

The questionnaire surveys have shown that most students were satisfied with the training provided at the Medical College and that the introduction of contemporary learning and tuition concepts increased their satisfaction from both theoretical and practical point of view.

The performed update of the academic plan of the Physical Therapy major and of curricula of specialized course – kinesitherapy, ergotherapy and therapeutic massage was, in our opinion, extremely efficient, with emphasis on more individual work with students and practical training, with introduction of modern special didactic methods and modernization of the material base of the Medical College, Stara Zagora in order to improve teaching quality.

In conclusion, it should be said that the acquisition of knowledge and practical skills for work with patients is essential for the young specialists and their realization in the public health system on the background of undergoing health reform and a good health status of the population.

REFERENCES

1. Koleva I., R. Yoshinov. The Medical rehabilitation and ergotherapy specialty. Sofia, RIK SIMEL, 2008, 187 p.
2. Koleva I. Functional evaluation in medical rehabilitation and ergotherapy. Manual for

students in medical rehabilitation and ergotherapy at the Medical University – Pleven. Sofia, RIK SIMEL, 2008, 154 p.
3. Koleva I. A Short Course in Kinesitherapy for Rehabilitators. Second edition. Manual for first-year physical therapists at the Medical College, Medical University, Sofia, RIK SIMEL, 2009, 168 p.
4. Ordinance on uniform state requirements for acquiring higher education in a professional field of "Health Care" for the degree "specialist" (Repealed in State Gazette, 87/2008). Ordinance on uniform state requirements for acquiring higher education in a professional field of "Health Care" for the degree "Professional Bachelor of ...", SG, 87, 2008.
5. Milcheva, H, Aspects of the training at the Medical College, Stara Zagora, 2006.
6. Milcheva, H., Ethical and deontological aspects of training, Stara Zagora, 2006.