Background
Urinary System: An Integrated Teaching Approach
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- Integrated medical curricula are already in place in many medical schools around the world, particularly in the developed countries.
- The aim of integration is to bring together basic and clinical sciences so as to enable the medical student to concurrently develop theoretical knowledge and practical skills.
- Every year, Victor Babes University of Medicine and Pharmacy Timisoara (UMFVT) offers a one-week summer school focused on a major body system.
- The urinary system was the only theme to be approached twice, namely in 2013 and 2015, at students’ request.
- A total number of 68 students participated, 35 in 2013, and 31 in 2015.

Design

- The modular course was designed to ensure integration:
  - Horizontal integration was achieved by bringing together pre-clinical disciplines (Anatomy, Histology, Physiology, Pathophysiology, Microbiology) on the one hand, and clinical ones on the other hand (Nephrology and Urology), with Semiotics linking the two levels.
  - Vertical integration between pre-clinical and clinical disciplines was further supported by adding paraclinical disciplines (Clinical Laboratory and Medical Imaging).
  - Even immunology basics were integrated with Urology and Nephrology in the context of kidney transplantation.

- Ten major themes, starting with the study of nephron and ending with the management of renal patient, were built around several case reports presented to students as a premise of teaching and ground of discussion.
- Seven hours of lectures and practical applications were scheduled each day.
- Each lecture was followed by workshops and small group discussions or practical works.
- Both expository and interactive teaching methods were used, with problem-based learning at the core of the educational approach.
- Case scenarios served the aim of applying integrated knowledge acquired from pre-clinical, paraclinical and clinical disciplines.

- At the end of summer schools:
  - Students’ knowledge was assessed by a multiple choice question test, with results above average, which was expected since this was a free chosen activity by students who were among the top 10% of their years of study.
  - The modular course itself was evaluated by students through a questionnaire, with excellent results.
  - Students were able to recognize abnormal renal health status and to indicate the correct course of treatment for various renal pathologies. They acquired better understanding of the newest developments in the field.
  - Teachers gained experience in working together in an effort to design and implement a different type of course.
Each year, Victor Babes University of Medicine and Pharmacy Timisoara offers a one-week summer school focused on one of the major body systems, addressed to students enrolled in the 2nd to 5th year. So far, the urinary system was the only theme to be approached twice, namely in 2013 and 2015, at students’ request.

The modular course was designed to achieve both vertical and horizontal integration, so that to ensure thorough understanding of this system structure and functions, as well as selected features of various renal pathologies. Horizontal integration was achieved by an interdisciplinary approach, i.e. bringing together pre-clinical disciplines (Anatomy, Histology, Physiology, Pathophysiology and Microbiology) on the one hand, and clinical ones on the other hand (Nephrology and Urology), with Semiotics linking the two levels. Vertical integration between pre-clinical and clinical disciplines was further supported by adding paraclinical disciplines (Clinical Laboratory and Medical Imaging). Case scenarios provided within workshops and small group discussions served the aim of applying integrated knowledge acquired from pre-clinical, paraclinical and clinical disciplines. Even immunology basics were integrated with Urology and Nephrology in the context of kidney transplantation. The course consisted of lectures and practical applications, including workshops and small group discussions in a problem-based learning setting.

A total number of 66 students were selected based on letters of intent and interviews. At the end of the summer school, students’ knowledge was assessed by a multiple choice question (MCQ) test, while the modular course itself was evaluated by students through a questionnaire. MCQ results were above average, which was expected since this was a free chosen activity by students who were among the first 10% of their respective year of study.

At the end of the course, the students were not only able to recognise abnormal renal health status, but also to indicate the correct course of treatment for various renal pathologies. Students also acquired a better understanding of the newest developments in the field, while teachers gained experience in working together in an effort to design and implement a different type of course.

Overall, the summer school experience was highly appreciated, as seen from the analysis of answers to the questionnaires for students and teachers. Conclusions: (1) Small group teaching enhances the quality of teaching and learning processes. (2) Close interaction with students enables appropriate feedback for improvement of teaching process. (3) An integrated approach to teaching and learning allows students to better integrate pre-clinical knowledge into clinical context.