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LEVEL OF EDUCATION ON PRE-ANALYTICAL PHASE OF LABORATORY TESTING IN THE POPULATION OF BIOMEDICAL STUDENTS AT THE UNIVERSITY OF ZAGREB, CROATIA – A CROSS-SECTIONAL SURVEY

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BACKGROUND-AIM

The pre-analytical phase of laboratory testing emerged as the most important part of the laboratory practice. Our hypothesis is that the level of education for biomedical students in this most vulnerable part of the testing cycle is not sufficient. The aim of our study was to assess the level of knowledge on pre-analytical phase in the population of biomedical students through a cross-sectional survey.

METHODS

An online questionnaire consisting of 14 statements about different fields of the pre-analytical phase, created with the SurveyMonkey tool (Palo Alto, Ca, USA), was distributed from June to September 2014 to the students of penultimate and final year of three biomedical faculties from Zagreb University: Faculty of Veterinary Medicine (FVM), Faculty of Pharmacy and Biochemistry (FPB) and School of Medicine. Statistical analysis of the data was done using a Chi-square test and Fisher's exact post-hoc test with MedCalc software version 10.20.0 (Mariakerke, Belgium).

RESULTS

A total number 136 students (from FVM, FPB and SM, N= 53, 29 and 54 respectively) answered the survey. A high ratio of correct answers for general statements related to specimen collection ("quality of the sample collection devices" P=0.634; "correct specimen collection technique" P=0.443) and storage ("storage conditions for urine sample" P=0.066) among all the students was found. Post-hoc statistical analysis showed that students from SM are not well informed on the importance of specimen mixing (FVM-SM P=0.011; FVM-FBP P=0.297; FBP-SM P=0.002). The students attending FPB and SM are more conscious about the impact of hemolysis on laboratory testing in comparison with their colleagues from FVM (FVM-SM P=0.013; FVM-FBP P<0.001; FBP-SM P=0.122).
The students of FPB had a higher number of correct answers than students from the two other faculties when more specific statements were considered on transport conditions for ammonia sample and the order of blood draw during specimen collection, respectively.

CONCLUSION

Survey results for the population of students in biomedical sciences at the University of Zagreb showed that the implementation of the education program concerning the pre-analytical phase of laboratory testing is needed in order to improve patient care.

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CONTINUING MEDICAL EDUCATION (CME) IN A UNIVERSITY HOSPITAL OF NATIONAL PROMINENCE AND HIGH SPECIALIZATION: INTEGRATING VARIOUS CME INTERVENTIONS

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BACKGROUND-AIM

Continuing Medical Education (CME) serves to maintain and increase knowledge, skills and professional performance. Italy requires that public and private health care provides obtain at least 150 credits in the period 2014-2016. CME activities aim at improving clinical competencies and technical skills so to ensure effectiveness, appropriateness, safety and efficiency in healthcare.

METHODS

In order to accomplish their educational goals, CME activities may include live seminars, workshops, web-based enduring materials, simulation training, on going faculty development series, and departmental regularly scheduled series. In order to facilitate achieving the highest credit score possible, out-of-hospital training (prevailing in past years) and in-hospital CME have been be implemented by accredited e-learning modules. However, with the purpose of integrating diversified strategies and overcoming the limits of learning from simulation, out-of-hospital CME activities should be integrated with hospital-based training programs.

RESULTS

In the University Hospital of Pisa, the units of laboratory, radiology and rehabilitation (about 400 health care providers) have developed hospital-based training courses on topics relating to hospital ward organization. Particularly, Laboratory unit provides over 30 courses for about 180 health professionals. This education training was implemented by 1) two interdepartmental educational programs: clinical risk management and communication health care (total of 6 events), 2) three distance learning modules: spine diagnostic and treatment, research methodology, occupational health and safety; 3) three courses promoted by Pisa hospital together with nearby hospitals: blood sample from the umbilical cord (Laboratory unit), effective dose in radiotherapy, neurocognitive function, 4) two level 2 courses (Laboratory unit): management in the pre-analytical phase and the emergency management.

CONCLUSION

We achieved the objective 2014 of fulfilling the CME requirements. By implementing high-level CME activities and distance learning course options, we will be able to achieve the goals also in the future, especially in the area of the laboratory that addresses complex challenges in healthcare delivery and education.

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DIGITAL PUBLICATION IN ACADEMIA: IMPLICATIONS FOR CLINICAL CHEMISTRY

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BACKGROUND-AIM

Digital publishing of textbooks has moved rapidly forward with the development of software and hardware and the increasing adoption of tablets in universities and high schools. Many publishers are becoming increasingly aware of the benefits: content can be updated rapidly and easily; content can be interactive and can also be embedded in the internet; usage can be monitored and assessed.Furthermore, all of these features can be accessed at a relatively low price making books more available across the world. The aim of this work was to develop interactive textbooks for clinical chemistry.

METHODS

The creation of an interactive e-book called “Practical Clinical Chemistry: core concepts” was accomplished using the Apple Macintosh platform and the iBooks Author software. Digital content, including videos, was developed for the project and embedded within the final package. In order to limit the size of the final files, some content was uploaded onto Youtube so that the user could access these via the internet.

RESULTS

The e-book, 200MB in size, was uploaded onto the Apple ITunes site and made available in 51 countries via the iBooks store. This prototype is the first interactive digital textbook available in clinical chemistry and contains “4-dimensional” content including digital images, videos, interactive presentations, real-time data generation as well as review questions with instant feedback and assessment.

CONCLUSION

The ability to embed dynamic material such as videos, animated presentations, 3-D objects and photo galleries allows a richer two-way interaction of the student with the material via the touch screen interface. These features allow a richer learning environment for subjects such as clinical chemistry and laboratory medicine where interactivity and self-directed learning of procedures and processes are often required. However, a challenge remains the limitation of the software to the Apple platform. This problem may be circumvented by new EPUB3.0 format which is being adopted by many publishers.