
МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ
МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
ВИЩИЙ ДЕРЖАВНИЙ НАВЧАЛЬНИЙ ЗАКЛАД УКРАЇНИ
БУКОВИНСЬКИЙ ДЕРЖАВНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ

МАТЕРІАЛИ

науково-практичної інтернет-конференції

РОЗВИТОК ПРИРОДНИЧИХ НАУК ЯК ОСНОВА НОВІТНІХ ДОСЯГНЕНЬ У МЕДИЦИНІ



м. Чернівці
27 листопада 2019 року

УДК 5-027.1:61(063)

Р 64

Медицина є прикладом інтеграції багатьох наук. Наукові дослідження у сучасній медицині на основі досягнень фізики, хімії, біології, інформатики та інших наук відкривають нові можливості для вивчення процесів, які відбуваються в живих організмах, та вимагають якісних змін у підготовці медиків. Науково-практична інтернет-конференція «**Розвиток природничих наук як основа новітніх досягнень у медицині**» покликана змінювати свідомість людей, характер їхньої діяльності та стимулювати зміни у підготовці медичних кадрів. Вміле застосування сучасних природничо-наукових досягнень є запорукою подальшого розвитку медицини як галузі знань.

Конференція присвячена висвітленню нових теоретичних і прикладних результатів у галузі природничих наук та інформаційних технологій, що є важливими для розвитку медицини та стимулювання взаємодії між науковцями природничих та медичних наук.

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Почесний гість

Prof. Dr. Anton Fojtik, Faculty of Biomedical Engineering, Czech Technical University, Prague, Czech Republic; Institute for Nanomaterials, Advanced Technologies and Innovation, Technical University of Liberec, Czech Republic

Розвиток природничих наук як основа новітніх досягнень у медицині: матеріали науково-практичної інтернет-конференції, м. Чернівці, 27 листопада 2019 р. / за ред. В. І. Федіва – Чернівці: БДМУ, 2019. – 390 с.

У збірнику подані матеріали науково-практичної інтернет-конференції «Розвиток природничих наук як основа новітніх досягнень у медицині». У тезах представлені результати теоретичних і експериментальних досліджень.

Матеріали подаються в авторській редакції. Відповідальність за достовірність інформації, правильність фактів, цитат та посилань несуть автори.

Для наукових та науково-педагогічних співробітників, викладачів закладів вищої освіти, аспірантів та студентів.

Рекомендовано до друку Вченою Радою ВДНЗ України «Буковинський державний медичний університет» (Протокол №4 від 28.11.2019 р.)

ISBN 978-966-697-840-3

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
MINISTRY OF HEALTH OF UKRAINE
HIGHER STATE EDUCATIONAL ESTABLISHMENT OF UKRAINE
“BUKOVINIAN STATE MEDICAL UNIVERSITY”

CONFERENCE PROCEEDINGS

DEVELOPMENT OF NATURAL SCIENCES AS A BASIS OF NEW ACHIEVEMENTS IN MEDICINE



Chernivtsi, Ukraine
November 27, 2019

UDC 5-027.1:61(063)

P 64

Medicine is an example of the integration of many sciences. Scientific research in modern medicine, based on the achievements of physics, chemistry, biology, computer science and other sciences, opens new opportunities for studying the processes occurring in living organisms and requires qualitative changes in the training of physicians. Scientific-practical Internet conference "**Development of natural sciences as the basis of the latest achievements in medicine**" aims to change the consciousness of people, the nature of their activity and stimulate changes in the training of medical personnel. The skillful application of modern scientific achievements is the key to the further development of medicine as a field of knowledge.

The conference is dedicated to the coverage of new theoretical and applied results in the field of natural sciences and information technologies, which are important for the development of medicine and stimulating interaction between scientists of natural and medical sciences.

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Invited lecturer

Prof. Dr. Anton Fojtik, Faculty of Biomedical Engineering, Czech Technical University, Prague, Czech Republic;
Institute for Nanomaterials, Advanced Technologies and Innovation, Technical University of Liberec, Czech Republic

Development of Natural Sciences as a Basis of New Achievements in Medicine: Conference Proceedings, November, 27, 2019, Chernivtsi, Ukraine/ edited by V.Fediv – Chernivtsi,BSMU, 2019. – 390 p.

The proceeding contains materials of a scientific and practical Internet conference "Development of the natural sciences as the basis of the latest achievements in medicine" which present the results of theoretical and experimental studies.

Papers are submitted by the author editing. The authors are responsible for the accuracy of the information, the correctness of the facts, quotations and references.

For scientific and scientific-pedagogical staff, teachers of higher education institutions, graduate students and students.

ISBN 978-966-697-840-3

4. В.І. Філімонов Клінічна фізіологія: підручник (ВНЗ III—IV р. а.) Всеукраїнське спеціалізоване видавництво «Медицина». Київ. 2012. 736 с.

5. Серебрянский С. Стратегические аспекты развития образования в условиях интеграции Украины в европейское образовательное пространство. Высшая шк. 2013. № 4. С. 37-41.

УДК 378.091.212.3:61:378.4

INFLUENCE OF ACADEMIC ENVIRONMENT IN HIGHER MEDICAL STATE EDUCATIONAL ESTABLISHMENTS ON STUDENTS' SUCCESSFUL LEARNING

Popova I.S.

Higher State Educational Establishment of Ukraine "Bukovinian State Medical University"

popova_i@bsmu.edu.ua

Abstract. Educational environment in higher medical educational institutions of Ukraine develops in the rhythm of nowadays medical reforms. Thus it is essential part of proper medical educational process on different levels of medical establishments organization. Students' perception of educational environment is important in their successful studying and moreover, shows the level of university engagement in teaching of motivated and professional future medical practitioners. The article is aimed to discuss existing situation in academic environment carried at the Department of Histology, Cytology and Embryology of HSEE of Ukraine "Bukovinian State Medical University", compare it with worldwide experience and find ways of its improvement.

Key words: academic environment, histology, medical curriculum.

Topicality. Current system of medical education is aimed to teach competitive medical practitioners who provide patients with professional health care. This can be achieved through appropriate academic environment that includes communication between students and university representatives, methodology of practical and theoretical classes at departments and clinics, and methods used for problem-bases learning in general.

As the system of healthcare nowadays is still undergoing reconstruction under the influence of rapidly developing world of medicine and appointed reforms in medical education, higher medical education in Ukraine is facing changes in providing qualified medical services.

Most valuable finding in the field of medical education show that positive perception of academic environment by students enhances their successful studying and gaining theoretical and practical skills [1, 2]. That is why we find it important to carry on studies, devoted to the problem of

academic environment at different levels of higher medical education organization and management in Ukraine.

Aim. This research is aimed to discuss existing worldwide standards of learning environment quality provision by higher medical establishments and compare to those held at the Department of Histology, Cytology and Embryology in HSEE of Ukraine “Bukovinian State Medical University”.

Discussion. Higher state educational establishments are those who form internal culture and ethical standards of future medical practitioners. They also form a particular level of medical students’ competence that in future results in quality of medical services provided in state and private medical establishments in general.

The academic environment includes the culture of communication existing between students and tutors at the university during in-class and out-of-the-class studying; it is actually the way how educational process is organized, managed and educational setting to facilitate learning. Learning environment is provided by all subdivisions of medical educational establishment itself and by medical students who are studying there. Medical education is a unique and challenging pedagogical procedure. The journey of 6 years within medical university starts with the help of school education and continues with acquiring both theoretical and practical skills needed for a future medical practitioner, who besides high knowledge in a specific field of medicine is also demanded to work psychologically correctly with patients and colleagues. This communicative skills, gained in the wall of medical university can actually lead to successful learning and easy cooperation with communicative environment in future practical work.

The learning environment includes the culture of communication existing in the class, department and university in general, the way how educational process is organized and educational setting to facilitate learning [3]. Still “academic environment” may include other elements like policies, governmental control and others. Various researches have shown that educational environment influences students’ academic achievements, level of motivation and success in studying [4, 5]. That’s why academic environment is partly a synonym to the correlation of students’ academic successfulness within education program. In our point of view, modern reforms in the system of higher medical education cannot be complete without modernization of academic environment in the university. Meaningful learning impacts students’ perception of the studying environment which influences learning outcomes.

Another side of academic communication in medical environment nowadays is importance of information technology in everyday usage. Modern medical universities have to face necessity of

computer technologies usage in academic process with respect to computer facilities for students. Informatics and computer skills are essential in medical profession. According to new medical reforms, majority of medical documents, including medical history and patients' analyses should be filled in electronic form, which is more convenient as for the medical practitioners, as well as for statistical analyses of hospitals work in general. Providing students with all necessary equipment and skills in IT field makes medical environment up-to-date and developing one. Due to this point of view, Department of Histology, Cytology and Embryology uses interactive screen for discussion cases of histological slides and task with clinical considerations; provides work in computer class for objective testing during final and intermediate module controls; involves electric microscopes for individual students' work with histological specimens.

Assessment of students' skills is an essential part of any medical curriculum. These lessons give opportunity to evaluate student's knowledge, practical skills and interest in learning. Competence in medicine is not a single exam achievement, but rather a lifelong habit of continuous studying. This emphasis should be mentioned in academic environment as future specialists will work in a new environment of continuous professional learning. Medical reform that has been made in the field of continuous improvement of medical competences actually levels up professionalism and gives motivation for younger generation of medical practitioners to make a studying process an essential everyday habit. Thus, exams in universities, especially at the Department of Histology, Cytology and Embryology reflects the relationship between a person's abilities gained through practical classes, and the tasks which one is required to perform in a particular clinical situation. Moreover, module tasks that have been created at the Department are aimed to develop clinical thinking starting from the earliest years of studying, as they use interdisciplinary integration with other subjects.

"Histology, Cytology and Embryology" discipline is learned by students during 2nd semester of the first year and 1st semester of the second year in Higher State Educational Establishment of Ukraine "Bukovinian State Medical University" at the Department of Histology, Cytology and Embryology for students of "General Medicine" faculty. Discipline is taught by assistants, associative professors and professors in English and Ukrainian. The curricula of the discipline are scientifically based, up-to-date clinically relevant and promote social responsibility of future doctors. As a result of Histology course we see students to be competent in working with histological material, prepare histological slides, determine main morphological peculiarities of normal human tissues and describe cytological features in various organs. Knowledge obtained at the Department of Histology, Cytology and Embryology is aimed to serve in any field of medical

practice for confirming clinical diagnosis, conduction of scientific researches and more. Recent efforts at the Department are focused on worldwide standards and are reviewed each year with adding new materials and interactive tasks.

Furthermore, students' perceptions of academic education they gain skills in are useful and informative basis for modifying the quality of educational environment. A number of questionnaires and tasks have been developed by sociologists and psychologists to evaluate students' attitude towards learning environment. The aim of this questions that are basically given to students at the end of the discipline is to evaluate their opinion on student-centered teaching and learning, level of theoretical and practical skills obtained during specific period of time and atmosphere during practical ad control classes. Analyzing such information from students allows improving teaching strategy at the department and enhancing students' satisfaction and achievements [3]. Feedback from students should be analyzed in different categories, such as teacher's professionalism, level of theoretical explanation, involvement of all participants into discussions, level of objective assessment, informative database for out-of-class preparation etc. By the end of Histology discipline, students are introduced with a web-site of the Department, where they can leave a feedback letter with their thoughts on problems, challenges and advantages while completing the discipline. Analyzing these applications gives an opportunity to solve the problems that student face during studying Histology discipline and take action on academic environment improvement.

Conclusions. Continuous improvement and implementation of innovative methods in the system of higher medical education lead to a comfortable academic environment. Positive attitudes and profound approaches are linked with successful education of future medical practitioners. We find it important to analyze students' feedback after completing the subject in order to improve academic environment.

References.

1. Bhalli, M. A., Khan, I. A., & Sattar, A. Learning style of medical students and its correlation with preferred teaching methodologies and academic achievement. *Journal of Ayub Medical College Abbottabad*, 27(4), 2016, 837-842.
2. Divaris, K., Barlow, P. J., Chendea, S. A., Cheong, W. S. et al. The academic environment: the students' perspective. *European Journal of Dental Education*, 12, 2008. 120-130.
3. Harmon, R. B., DeGennaro, G., Norling, M., Kennedy, C., & Fontaine, D. Implementing healthy work environment standards in an academic workplace: An update. *Journal of Professional Nursing*, 34(1), 2018. 20-24.
4. Ketonen, E. E., Haarala-Muhonen, A., Hirsto, L., Hänninen et al.. Am I in the right place? Academic engagement and study success during the first years at university. *Learning and Individual Differences*, 51, (2016). 141-148.
5. Sharma, B., Kumar, A., & Sarin, J. Academic stress, anxiety, remedial measures adopted and its satisfaction among medical students: A systematic review. *International Journal of Health Sciences and Research*, 6, 2016. 368-376.