МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ
МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ`Я УКРАЇНИ
БУКОВИНСЬКИЙ ДЕРЖАВНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ

МАТЕРІАЛИ

III науково-практичної інтернет-конференції

РОЗВИТОК ПРИРОДНИЧИХ НАУК ЯК ОСНОВА НОВІТНІХ ДОСЯГНЕНЬ У МЕДИЦИНІ

м.Чернівці
21 червня 2023 року

Bogutska N.K.

SIMULATION TEACHING METHODS IN MEDICAL EDUCATION FOR FOSTERING THE CORE COMPETENCE OF CLINICAL REASONING

Bukovinian State Medical University, Chernivtsi

nbohutska@bsmu.edu.ua

Clinical reasoning (CR) is a clinical core competence for medical students to acquire. CR is a complex set of abilities that healthcare professionals must learn and rehearse steadily along their carriers. Failure to practice this skill adequately may cause serious or fatal diagnostic or managing errors in patient care. Clinical decisions are based on the understanding of medical facts and knowledge of the patients. CR is the experiential and formal knowledge learned through years of practice and study. The transition of medical knowledge into good patient-centered decisions is a key goal of CR and is the hallmark of a clinician ready to practice. Students and young doctors are taught how to recognize specific clusters of signs and symptoms (syndromes) and are forming their own algorithms of diagnostic process. The experienced clinicians know when adherence to such algorithms is proper and when exceptions, based on the patient's situation or preferences, can lead to divergence from these algorithms. Most of CR, however, lies outside of simple algorithms and requires judgment. There is the difference between experts and younger doctors in their CR approach to problems. Students tend to rely on abstract principles and slower gradual understanding in contrast with experts, who rely on past experience and integral understanding. Experts are therefore better able to see the bigger picture of a patient's problem and assess the importance of the combined interaction between many signs and symptoms rather than focusing too narrowly on specific individual items [2].

In the experienced specialists CR is close to "pattern recognition" approach, majority of conditions have very characteristic presentations and, with experience, it is relatively straightforward to diagnose the next case drawing on previous cases seen. Pattern recognition is therefore much more commonly used by experienced or expert diagnosticians compared with novices. This is a gap between the expert-novice knowledge and clinical experience. Therefore, much of daily practice will consist of seeing new cases that strongly resemble previous encounters and comparing new cases to old. The same approach is proposed in our CR curriculum using case-based learning: regular steady progress based on repeated training with use of virtual patients. Unfortunately in the majority of higher medical institutions in Ukraine current medical curriculum lacks a structured standardized method of teaching, learning and assessing CR. That's why

370

III Науково-практична конференція РОЗВИТОК ПРИРОДНИЧИХ НАУК ЯК ОСНОВА НОВІТНІХ ДОСЯГНЕНЬ У МЕДИЦИНІ Чернівці, 21 червня 2023

inventing and implementing a modern CR curriculum could help not only to reduce future diagnostic errors and costs for patients, but also to change didactic approach for the use of modern techniques in medical education [3]. In collaboration with German medical universities since 2022 BSMU starts to be an active participant of adapting and implementing existing CR modules in current curriculum using case-based learning with virtual patients on CASUS platform. In order to foster CR skills training, this e-platform is connected with a CR tool, which is based on a concept mapping approach. During their case-based learning experience, students are asked to document relevant findings, formulate differential diagnoses, select necessary tests and examinations, and make decisions concerning treatment options in a structured and thorough manner. Besides using virtual patients in order to foster CR skills learning, in BSMU a novel case-based, peer-taught and physician-supervised collaborative learning format of Clinical Case Discussions [1] was implemented from 2022-2023.

Thus, in collaboration with German universities the new didactic approaches, e-virtual cases as modern simulation teaching methods and CR training modules are adapted and to be implemented in the curriculum in order to foster CR training skills and fill the existing gap. A train-the-trainer course for educators on how to teach CR is currently developing for some small groups for pilot implementing in the higher medical institutions in Ukraine. In future by spreading received experience we are planning to conceptualize, develop, evaluate and disseminate a CR curriculum in healthcare education for students in Ukraine.

References

1. Koenemann N, Lenzer B, Zottmann JM, Fischer MR, Weidenbusch M. Clinical Case Discussions - a novel, supervised peer-teaching format to promote clinical reasoning in medical students. *GMS J Med Educ.* 2020 Sep 15;37(5):Doc48. doi: 10.3205/zma001341. PMID: 32984507; PMCID: PMC7499459.
2. Linn A, Khaw C, Kildea H, Tonkin A. Clinical reasoning - a guide to improving teaching and practice. Aust Fam Physician. 2012 Jan-Feb;41(1-2):18-20. PMID: 22276278.
3. Sudacka M, Adler M, Durning SJ, Edelbring S, Frankowska A, Hartmann D, et al. Why is it so difficult to implement a longitudinal clinical reasoning curriculum? A multicenter interview study on the barriers perceived by European health professions educators. *BMC Med Educ.* 2021;21(1):575.