

The status of anatomy education in scope of the national core education program 2020: The case of Turkey

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ABSTRACT

Objective: Many branches of science are constantly changing and developing according to the innovations and the requirements of the era. Developments and medical information, especially in the field of medicine, renew itself every year. In this study, we aimed to analyze comparatively the place of anatomy education, which has an important place in undergraduate medical education, in the National Core Education Program (NCEP)-2020.

Material and Methods: In this study, the categories of basic medical practices in NCEP-2020, clinical symptoms/findings/situations, core diseases/clinical problems and the relationship between learning levels and anatomy education were evaluated one by one. Parameters were expressed in percentile using a descriptive statistical method. There are 157 Basic Medical Practices in 9 sub-categories (A-I) within the scope of NCEP-2020.

Results: It was determined that 48 of these were related to anatomy education. The number of basic medical practice was mostly in the E sub-category (n=23, 47.92%). The second sub-category with the highest number of basic medical practices was determined as B (n=16, 33.33%).

Conclusion: One of the important conclusions we have reached within the scope of the study is that NCEP-2020 has an important place in terms of scope in determining, developing and standardizing the educational curricula of medical faculties.

Keywords: Anatomy, Basic Sciences, Curriculum, Medical Education Research, Medicine

INTRODUCTION

Education has a very important role for people to inherit their culture to new generations. Although the beginning of education goes back to very old times, its treatment as a science is based on a recent history. Many branches of science are constantly changing and developing according to the innovations and the requirements of the era. Developments and medical information, especially in the field of medicine, renew itself every year. In addition, it is now a necessity to update medical education, methods and materials and to make them suitable for the conditions. One of the main conditions of being a modern society for Turkey is the modern education system as it is for every country (1,2).

It is observed that different dynamics in different time periods are effective in the development of medical education in the world. One of influential milestones worldwide is Flexner Report by Abraham Flexner (3). In this report, which is a major milestone for medical education, it states that the medical education is inadequate, education of different qualities is given and that the education model should be discussed again and comprehensively in the light of general education and training principles (3,4). Since the 1980s, due to the increase in the number of medical faculties in Turkey's medical education, different educational models and programs were implemented. Especially after the Edinburgh Declaration, which was accepted and published by World Conference on Medical Education organized by the World Federation for Medical

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Education in 1988, the studies in the medical education were more concentrated towards the end of the 1990s (5). The purpose of medical education is to train medical students who will improve the health of all people as stated in the Edinburgh Declaration (6). One of the main conditions for achieving this is the active use of up-to-date knowledge and experience in the field of education. In this regard, curricula have been developed with different committees and meetings since 2000s in order to structure the developing medical education in Turkey according to today's needs. As a result of these studies, the National Core Education Program (NCEP) was published for the first time in 2003 in order to provide an improvable medical education curriculum for medical faculties (7). NCEP-2014 has been published with its updated content in 2014. It was decided to review this program every six years due to the necessity of constantly improving it according to the needs of the day (8). However, as a result of the studies that started in 2014, NCEP-2020, which addresses a wide range of and different perspectives, was presented in April 2020. "Should there be a separate NCEP for basic medical sciences in NCEP-2020?" the question has come up. Instead, it was decided to include examples of how basic medical sciences can use NCEP in order to ensure integration in medical education (9).

NCEP contents of previous years do not include such a study on basic medical sciences. For an adequate and effective medical education, the six-year curriculum should be considered as a whole. Nevertheless, it is known that clinical information is difficult to settle without basic medical sciences. In this study, we aimed to analyze comparatively the place of anatomy education, which has an important part in undergraduate medical education, in NCEP-2020.

MATERIAL and METHODS

Ethics committee approval was obtained from Afyonkarahisar Health Sciences University Non-Invasive Clinical Research Ethics Committee for the study (Date: 04/30/2021, Decision No: 2021/310). In this study, the categories of basic medical practices in NCEP-2020, clinical symptoms/findings/situations, core diseases/clinical problems and the relationship between learning levels and anatomy education were evaluated one by one. Considering the basic medical sciences NCEP compliance table, it was analyzed according to the basic medical practices categories and learning levels related to anatomy education.

Statistical analysis

Study data were evaluated using the SPSS 24.0 program. First of all, the data were categorized. Qualitative and quantitative data were grouped. Other data were presented with descriptive statistics. Parameters were expressed in percentile using a descriptive statistical method.

RESULTS

When the NCEP-2020 sample table is examined, basic medical sciences are discussed in three categories such as Core diseases/Clinical problems, Clinical Symptoms/Conditions, and Basic Medical Practices. The distribution of all data by categories is shown in Figure 1. Symptoms, clinical problems and diseases under the categories have been determined by considering the whole of NCEP-2020.

However, it has been observed that symptoms, clinical problems and diseases that are expected to be reflected in the program in different periods during the six-year training program, which should be given more weight in each category, are particularly expressed. In this context, it has been determined that there are 68 (48.2%) symptoms, clinical problems, and diseases under the Symptoms/Conditions list and 97 (28.3%) under the list of Core diseases/Clinical problems. It was determined that these were necessary for basic medical sciences and should be included in the first three years of medical education.

It was determined that there are 157 Basic Medical Practices in 9 sub-categories (A-I) within the scope of NCEP-2020. It was determined that 48 of these were related to anatomy education. Basic medical practices and learning levels related to anatomy education were shown in Table 1.

A related practice between basic medical practice sub-categories A, G and H and anatomy education could not be detected. The number of basic medical practice was mostly in the E sub-category (n=23, 47.92%). The second sub-category with the highest number of basic medical practices was determined as B (n=16, 33.33%).

According to at the distribution of learning levels related to basic medical practices, it was found that the highest learning level was 3 (26 (54.17%)) and 4 (15 (31.25%)). The relationship between sub-categories and learning levels was presented in Table 2.

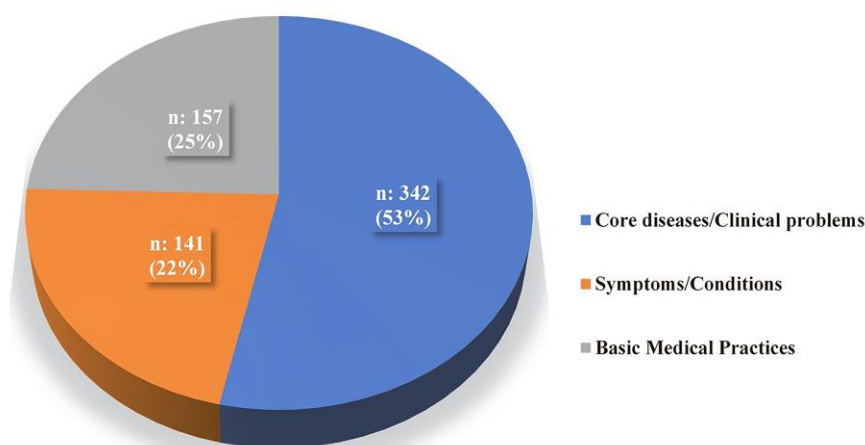


Figure 1: Basic medical sciences the National Core Education Program (NCEP) compliance categories

Table 1: Basic medical practices related to anatomy education

Basic Medical Practices	Learning Level
A. Taking history	
B. General and problem-oriented physical examination	
B1. Forensic case examination	3
B2. Anthropometric measurements	3
B3. Abdominal examination	4
B6. Skin examination	4
B9. Evaluation of general condition and vital signs	4
B10. Eye fundus examination	2
B11. Eye exam	3
B12. Gynecological examination	3
B13. Cardiovascular system examination	4
B14. Musculoskeletal system examination	3
B15. Ear-nose-throat and head-neck examination	3
B16. Breast and axillary region examination	3
B17. Neurological examination	3
B19. Dead examination	3
B21. Respiratory system examination	4
B22. Urological examination	3
C. Record keeping, reporting and notification	
C6. To be able to prepare health reports in accordance with current legislation	3
D. Laboratory tests and other related procedures	
D1. To be able to apply the principles of working with biological material	4
D4. To be able to evaluate direct radiographs	3
D5. To be able to take and evaluate ECG	3
D19. To be able to prepare a sample of vaginal discharge	3
E. Interventional and non-invasive practices	
E9. Ability to apply bandage, tourniquet	4
E10. To be able to intervene in nosebleeds	2
E12. Evaluation of the multiple trauma patient	3
E13. Ability to establish vascular Access	3
E16. To be able to open a skin-soft tissue abscess	3
E17. Ability to take measures to stop / limit external bleeding	3
E28. Foreign body removal from the eye	2
E29. Ability to take biological samples from the patient	3
E33. To be able to provide first aid to remove the foreign body in the airway	3
E35. Intramuscular (IM), Intravenous (IV), Subcutaneous (SC), Intradermal (ID) injection	4
E36. Being able to insert a urinary catheter	3
E39. To be able to apply intraosseous	2
E40. To be able to measure blood pressure	4
E45. Enema	3
E46. To be able to perform lumbar puncture	1
E48. To be able to apply a nasogastric tube	3
E50. To be able to apply oxygen and nebul inhaler therapy	4
E51. To be able to apply oral, rectal, vaginal and topical drugs	3
E52. Autopsy	2
E59. Ability to apply a cervical collar	4
E61. To be able to evaluate respiratory function tests	3
E62. To be able to perform suprapubic bladder puncture	2
E67. Ability to take vaginal and cervical samples	3
F. Preventive medicine and community medicine practices	
F7. Teaching breast self-examination	4
G. Scientific research principles and practices	
H. Healthiness	
I. Health Screenings	
I2. Developmental hip dysplasia screening program	4
I3. Vision screening programs	4
I4. Hearing screening programs	4

Table 2: The relationship between basic medical practice subcategories and learning levels in terms of anatomy education

Learning Level	Basic Medical Practices Sub-categories						Total
	B	C	D	E	F	I	
1	-	-	-	1	-	-	1 (2.08%)
2	1	-	-	5	-	-	6 (12.5%)
3	10	1	3	12	-	-	26 (54.17%)
4	5	-	1	5	1	3	15 (31.25%)
Total	16 (33.33%)	1 (2.08%)	4 (8.33%)	23 (47.92%)	1 (2.08%)	3 (6.25%)	48 (100%)

DISCUSSION

Core education program (CEP) is a concept used in all fields related to education. It emerged as a definition accompanying the development of academic sciences in the 20th century. It is used to refer to the common set of courses or curriculum that all students studying in an institution or discipline are deemed necessary to take, regardless of their choice. Basically, CEP, which was put into practice as an answer to the question of what every student should know and what he should be able to do, constitutes the common denominator of knowledge, values, sensitivities and skills related to that discipline (10).

In order to meet a common ground in medical education and to improve medical education, changes have occurred at different times depending on different dynamics in Europe, America and Turkey. Medical education has undergone many evaluations, developments and changes from the beginning of the 1900s to the present. The Flexner Report was published in 1910, examining the medical education in America and Canada, which had an important turning point in the history of medical education. In the Flexner Report, medicine was defined as an experimental discipline in which general laws of biology are valid, and it was stated that medical education should be structured on this general principle (3,11).

Another important step in medical education is the Edinburgh Declaration published in 1988. The declaration put forward by participants invited from six regions around the world has been widely accepted and applied in medical education by many countries. The declaration includes decisions such as determining the educational programs in consideration of national health needs and adding active learning methods to the curriculum to ensure lifelong learning (6).

Along with the published reports and declarations, thanks to the developing technology and today's conditions, the knowledge and practices in the field of medicine have developed greatly in recent years and a significant part of it has changed. As a result, some of the old medical skills have become unnecessary and some have changed. In addition, new skills that emerged as the product of new medical knowledge have taken their place in medical practice. Towards the end of the 20th century, the excessive theoretical load of the courses given in undergraduate medical education led to reform efforts trying to increase the quality of education programs. As a result of these efforts, concepts such as result-oriented core training program have emerged (12–14).

In Turkey, efforts to develop a core education program in this context started in the 2000s. As of 2003, NCEP-2003 was published and this process continued with updates in 2014 and 2020 (7–9). Prepared at the level of medical faculties, NCEP offers the general framework and basic principles that should be taken into account by education boards and departments during the development, implementation and improvement of all education programs in the pre-clinical and clinical period. However, a sample table for basic medical sciences was presented for the first time in NCEP-2020. Thus, it is aimed to ensure integration in pre-clinical and clinical period (9).

Anatomy is one of the departments included in basic medical sciences in the pre-clinical education process. Anatomy has a very important course in the first three years of basic medical education. In addition to enhancing basic medical performance, cadaver dissection and anatomical understanding are known to play an important role in appropriate clinical examinations, interpretation of radiographs, and execution of interventional procedures. In this context, the anatomy curriculum in medical schools at international level has been increasingly modified to expose students to multiple specialties before their clinical rotation and to accelerate their development (15–21). As stated in the literature, anatomy education should be carried out together with clinical education in today's standards. In the analysis in NCEP-2020, we determined that 48 (30.56%) of 157 basic medicine practices were related to anatomy education in accordance with the literature. In this respect, NCEP-2020 has a great place in ensuring integrity in terms of anatomy in national medical education.

Anatomy courses are one of the cornerstones of medical education, where clinicians develop their clinical skills. In this context, cadaver dissection to increase clinical skills is accepted as the gold standard in anatomy education (22,23). Also, it was predicted in the literature that anatomy education would be cadaver-free within ten years. It was believed that traditional anatomy education would be replaced by alternative training modules such as virtual dissection, medical imaging, and multimedia resources (24,25). Although today's technology and conditions have changed, cadaver dissection will always maintain its importance in anatomy education. In NCEP-2020, under the subcategories of basic medicine practices, forensic case examination, death examination and autopsy are included. Cadaver dissection training in the pre-clinical anatomy course will make a great contribution to the medical students to gain these competencies. Therefore, we are of the opinion that cadaver dissection-based anatomy course should be included in the scope of the national education program.

According to the data of the Council of Higher Education, as of 2020, there are medical faculties in 105 universities (74 state and 31 foundation) (26). According to the data of the Association for Assessment and Accreditation of Medical Education Programs, 41 of these medical faculties have accredited pre-graduation education programs. There are also 21 medical faculties that have applied for the accreditation of education programs. The purpose of medical faculties to be accredited is to contribute to the improvement of the quality of medical education in Turkey. Thus, physicians who have the knowledge, skills and attitude to respond to the health problems of the society with high quality health services by integrating the developments in science and society with medical practices, who have acquired the desire and ability to learn more than they know during their professional life, and who can contribute to scientific developments, are the level is aimed to be taken forward (27). One of the important criteria in accreditation is to evaluate medical education as a whole and to determine whether pre-graduate education programs meet the minimum standards.

From this point of view, the most important step for undergraduate medical education programs to meet the minimum standards is the NCEP. Within the scope of NCEP-

2020, symptoms, clinical problems and diseases that are expected to be reflected in the program continuously in different periods during six years of medical education are included under the titles Symptoms/Conditions and Core diseases/Clinical problems. Adding examples of basic medical sciences to the scope of NCEP-2020 will make a great contribution to the formation of the standard education program. This process may have a great contribution to ensuring the standard in medical education, maintaining integrity in the pre-clinical and clinical period, and increasing the number of accredited medical faculties.

CONCLUSION

One of the important conclusions within the scope of the study is that NCEP-2020 has an important role in terms of scope in determining, developing and standardizing the educational curricula of medical faculties. We believe that NCEP-2020, which has been implemented by all medical faculties, will be taken as an example for NCEPs to be prepared in the future by preserving its main structure. It is difficult to consolidate clinical knowledge without basic medical sciences. For this reason, the importance of basic medical sciences such as anatomy in NCEP files will ensure the standard throughout the entire education-training scope until graduation from the first year, in future. Thus, the number of accredited medical faculties will probably increase.

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