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Özet

Amaç: Amacımız Türk Hematoloji Derneği yeterlik sınavı uygulaması hakkında bilgi vermek ve sürekli tıp eğitimi ve yeterlik sertifikasyonu konusunda farkındalık yaratmaktır.

Yöntem: Türk Hematoloji Derneği tarafından 2010 yılından bu yana düzenlenen kuramsal yeterlik sınavlarına ait veriler ve Türk hematologların 2017 yılından beri düzenlenen Avrupa Hematoloji Sınavlarına katılım durumları değerlendirilmiştir. Sınava başvuran hematoloji asistan ve uzman sayıları, katılımcıların başarı düzeyleri araştırılmıştır.

Bulgular: 2010 yılından bu yana toplam 10 Hematoloji Yeterlik Yazılı Sınavı uygulanmış ve toplam 108 aday sınava başvurmuştur. Sınava girenlerin %53,7'si (58 aday) kadın, %46,3'ü (50 aday) erkek katılımcıdır. 2010 yılından bu yana uygulanan yeterlik sınav sonuçlarına göre, adayların tamamına yakını (%99,0) sınavda başarılı olmuştur. Yeterlik sözlü /pratik sınavı ilk kez 29.04.2023 yılında yapılmıştır.

Sonuç: Hematoloji eğitiminde ideal bir düzey ve standardizasyon sağlamak için yeterlik sınavları şarttır. Avrupa Hematoloji Sınavı ile kıyaslandığında ülkemizde yeterlik sınavına katılım beklenenin altındadır. Hematologların, Hematoloji Tıpta Uzmanlık Yeterlik Komisyonu'nun (HEM-TUYEK) düzenlediği Hematoloji Yeterlik Sınavı'na katılımları teşvik edilmelidir. Hematologlar, profesyonellik ve sürekli tıp eğitiminin bir göstergesi olan yeterlik sertifikasına sahip olma konusunda desteklenmelidir.

Anahtar Sözcükler: Klinik yeterlik, Sürekli eğitim, Hematoloji

Abstract

Objective: The purpose of the present paper was to provide information about the Turkish Society of Hematology Proficiency Exam and to raise awareness about continuing medical education and proficiency certification.

Method: The data of the theoretical proficiency exams organized by the Turkish Society of Hematology since 2010 and the participation of Turkish hematologists in the European Hematology Examinations organized since 2017 were evaluated in the study. The number of hematology assistants and specialists who applied for the exam and the success levels of the participants were investigated.

Results: A total of 10 Hematology Proficiency Written Exams have been administered since 2010 and a total of 108 candidates applied for the exam. A total of 53.7% (58 candidates) of the test takers were female and 46.3% (50 candidates) were male. According to the results of the proficiency exam that has been applied since 2010, almost all of the candidates (99%) were successful in the exam. The proficiency oral/practical exam was held for the first time on 29.04.2023.

Conclusion: Proficiency exams are essential to provide an ideal level and standardization in hematology education. When compared to the European Hematology Examination, participation in the proficiency exam is lower than expected in our country. Hematologists should be encouraged to participate in the Hematology Proficiency Exam organized by the Hematology Medical Specialization Qualification Commission (HEM-TUYEK). Hematologists must also be supported to have a certificate of competence, which is an indicator of professionalism and continuous medical education.

Key Words: Clinical competence, Continuing education, Hematology

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Introduction

There are 128 medical faculties in our country as of 2023, 91 of which are state and 37 foundation faculties. There are 88 specialties, 42 of which are major, and 46 subspecialties in Turkey, and according to the current data of the Ankara Medical Chamber, there are 4612 programs established to provide specialty training in Turkey; however, 4023 of these have been eliminated or suspended (1). It is not clear what the objective criteria of the competence of these education programs are or according to which scientific systematic they make evaluations.

In specialization competency certification, a physician is documented by completing his/her specialty training and being evaluated in terms of knowledge, experience, and clinical skills associated with this training. For this reason, in our present day, it is accepted as proof that a physician is at the level of competence with the reliability and responsibility to provide the highest quality healthcare service. Specialization proficiency certification exams, briefly, specialty proficiency exams, enable physicians to update their knowledge and skills in their specialty branches and to have their competencies approved by other colleagues.

Specialization proficiency exams were applied for the first time in 1904 in the USA in Ophthalmology, and then other branches followed. Studies for the certification of competency in the field of specialization were initiated in our country in 1997 by the Turkish Medical Association Specialization Societies Coordination Board. The draft directive that was prepared by the general surgeon Prof. Dr. İskender Sayek, the Neurosurgeon Prof. Dr. Yücel Kanpolat, and the Orthopedist Prof. Dr. Yücel Tümer was discussed and approved in 1998 (2). This directive was sent to specialty associations, asking them to determine their proficiency boards and criteria. The Turkish Surgical Association approved the application of the proficiency exam at the National Surgical Congress in Izmir in 1998 and pioneered the proficiency written exam for the first time at the joint congress of National Surgery and EuroSurgery held in Istanbul in 2000. For this reason, the first specialty proficiency exam was made in 2000 by the Turkish Surgery Association in the branch of General Surgery in

Turkey. The National Competency Board was established by the Turkish Medical Association Specialized Societies Coordination Board in 2004. In this way, proficiency committees were established in 43 major branches and subspecialties specified in the Regulation on Specialization in Medicine (2).

Turkish Society of Hematology (TSH) Board of Competency was established on 16.11.2008 under the management of TSH Chairman of the Board Dr. Muhit Özcan. The full members of Education Commission were Dr. Zafer Gülbaş, Dr. Hamdi Akan, and Dr. Sema Karakuş, and the substitute members were Dr. Ahmet Muzaffer Demir and Dr. Reyhan Küçükkaya. Dr. G. Hayri Özsan served as the President, and Dr. Ozan Salim and Dr. Şebnem Yılmaz served as the Secretary in 2014. Dr. Nilgün Sayınalp was appointed as the Chairman in 2016, and Dr. Ozan Salim, Dr. Şebnem Yılmaz, and Dr. Şule Ünal were appointed as the secretary. Dr. Nilgün Sayınalp was appointed as the President in 2022 and Dr. Özgür Mehtap, Dr. Şebnem Yılmaz, and Dr. Şule Ünal were appointed as the secretary (3).

TSH was authorized at the general assembly held on November 4, 2021, to establish, protect and raise the standards of hematology specialty education, lay the foundations for the competence in specialty education and the accreditation of training units, provide quality control in education and practice, conduct standardized examinations at the country level for specialization education, issue the hematology specialty proficiency certificate, encourage participation in postgraduate continuing medical education activities, establish a founding commission and start the studies to conduct certification and certification studies. With this authorization, an independent founding commission called Hematology Medical Specialization Qualification Commission (HEM-TUYEK) was established and studies were initiated. With the decision of the TSH Board of Directors, Dr. Ahmet Muzaffer Demir, Dr. Meltem Aylı, Dr. Meliha Naçacı, Dr. Nilgün Sayınalp, Dr. Leylagül Kaynar, Dr. Özcan Bör, Dr. Funda Tayfun Küpesiz were appointed as the members of the Founder Executive Board (FEB). FEB held its first meeting on January 13, 2022, and President (Dr. A. Muzaffer Demir), Vice President (Dr. Meltem

Aylı) and Secretary (Dr. Funda Tayfun Küpesiz) were elected and the distribution of duties was made (4).

In the definition made by HEM-TUYEK, which was established with the support of THD, "Hematology is a branch of science that includes the prevention, diagnosis, and treatment of many benign and malignant diseases associated with the blood, bone marrow, and lymphatic system, requiring a multidisciplinary approach in patient management and continuous professional development in the light of scientific research. The purpose of the hematology training program is defined as follows: "to train hematology specialists who can manage diagnosis and treatment follow-up processes, have communication knowledge, who can lead / be a member of a team that can protect blood diseases, which have an important place in public health, can have high morbidity and mortality, and create an economic burden on society" (4).

HEM-TUYEK has the vision of "To provide and maintain the highest contemporary education standard with regular and continuous improvements in hematology education in the light of current knowledge in the field of hematology" (4).

The commission's mission is "to prepare a training program that will enable Hematology Subspecialty training students to manage the diagnosis and treatment process of blood, bone marrow and lymphatic system diseases in the best way and to ensure that Hematology Subspecialty training students carry out their education and medical practices socially and scientifically within the framework of ethical values throughout their professional lives" (4).

Although HEM-TUYEK was established with the decision of TSH Board of Directors and its financial support was provided by TSH, it is emphasized that HEM-TUYEK is in a position above associations and its activities are open to the entire hematology community.

The adoption of the HEM-TUYEK directive was on 07 March 2022. Five working groups were established to support HEM-TUYEK (Program Development, Program Evaluation (Accreditation), Assessment Evaluation, Continuing Medical Education, and Medical

Specialization Students). The duties and responsibilities of the working groups were defined in the HEM-TUYEK directive and the work of these groups continues rapidly (3).

HEM-TUYEK Assessment and Evaluation Group (EAEG) elected the group manager and reporters at its first meeting and appointed Dr. Meltem Kurt Yüksel as the chairperson and Dr. Asu Fergün Yılmaz and Dr. Neslihan Andıç as the reporters. EAEG prepared a draft directive to serve as a basis for conducting both theoretical and practical exams together and in line with international standards (3)

In selecting the theoretical exam questions, the content validity was taken into consideration to be formed from the topics with the highest education levels based on the updated Medical Specialization Board Curriculum Formation and Standard Setting System (TUKMOS)-Hematology curriculum, a software program (MEDU-Hematology, <http://meduplus.com>) was purchased for the preparation of theoretical exams, peer evaluation of questions, preparation of questions by associating them with the departments and topics in TUKMOS-Hematology, creating a question bank, conducting exams in the digital environment, and performing post-exam item analysis. Also, an objective structured clinical exam with 8 stations was applied to measure and evaluate knowledge and skills in cooperation with Hacettepe University Faculty of Medicine, Department of Medical Education and Informatics, so that the exam would be in the form of an objective structured clinical exam. A contract was signed between the Turkish Hematology Association and Hacettepe University Rectorate so that the exam can be held at Hacettepe University Faculty of Medicine and the faculty members of the Department of Medical Education and Informatics could provide consultancy (4).

The final exam was held on April 29, 2023, in Hacettepe University Department of Medical Education and Informatics with a combination of a theoretical 100 questions and an objective structured clinical exam consisting of 8 stations. 9 people who were working as hematology specialists or were in the last 6 months of their hematology specialization training participated in this exam (3).

The competency certification of hematologists is performed entirely voluntarily. The scope, form, and date of the proficiency exam are determined by the commission. Entry conditions, levels, places, dates, and methods of the proficiency exams are announced at least two months before the exam. The examination process is performed in line with the pre-prepared and approved assessment and evaluation directive.

According to HEM-TUYEK, for the candidate to take the proficiency exams, he/she must have a specialization certificate in line with the Medical Specialization Regulation, the subspecialization student report card is compatible with the current education program, detailed and timely, and the theoretical and practical training throughout the specialty education period, activities must be documented and approved by the trainers, and it must be documented that the required rotations are made in line with the rotation training program. Every specialist who certifies that s/he has received training in line with these criteria has the right to participate in the proficiency exam. Specialization students who are in the last 6 months of their subspecialization period are also entitled to take the proficiency exams. Candidates who are successful in the theoretical evaluation exam are entitled to apply for the practical exam. Candidates who fail the exam are not allowed to take the practical exam until they pass the next theoretical exam and pass the exam. The right of the candidate who is successful in the theoretical exam, which is the first step of the hematology medical specialization proficiency exam, is limited to 3 (three) years. Candidates who do not take the practice exam or fail the practice exam within this period must take the theoretical exam again. Candidates who fail the theoretical exam have unlimited rights to take the theoretical exam again (4).

Theoretical (Multiple-Choice Test) and practical exams for remembering, synthesizing, and making decisions are held as objective structured clinical exams at least once a year in April. In HEM-TUYEK theoretical exam, totally 70 out of 100 full points is accepted as success. Since complete learning is not targeted as a criterion for success in the theoretical exam, 70.0% success is expected from the total of all sections. Each

section is not accepted as a separate threshold. The detailed exam results are notified to those who take the exam within 2 (two) weeks at the most, taking care of confidentiality. Low scores in some topics are important for the candidates to guide their future learning. A "Hematology Proficiency Certificate" is given to those who are successful in the exam. These documents are valid for 5 years (3). In addition, these results are reported to the relevant specialty associations (such as TSH) within the scope of continuing medical education and to the Turkish School of Hematology-Turkish Academy of Hematology, where the training program of subspecialists is organized.

Persons who have completed the hematology specialization training in a foreign country can take this proficiency exam if they document that they comply with the entrance criteria of the proficiency exam. The conditions to be sought and the rules to be followed for such candidates must be the same as those who do specialization training in Turkey. The European Union of Medical Specialists (UEMS) Proficiency Certificate is considered equivalent to the Turkish Hematology Proficiency as Turkey is accepted as a member of the UEMS. Those banned from the profession are not accepted to the Proficiency Exams and their Proficiency Certificates are cancelled if they have taken it before.

For the ideal validity period of the proficiency certificate, there is a general opinion that "it must not be less than the duration of specialization training in medicine in the relevant branch, but it must not exceed five years". In general, the validity period of the certificate obtained as a result of the proficiency exams is between 5-10 years, and the "Maintenance of Certification - MOC" exam is taken after the period expires. This practice is also called "recertification". Maintaining certification is a testament to professional standing, lifelong learning and test-taking commitment, and assessment of practice performance. The validity of the TSH Hematology Proficiency Certificate is 5 years and at the end of the 5th year, physicians are invited to the "recertification". The recertification is also performed entirely voluntarily. The initial certification is valid until the recertification process begins. However,

recertification conditions were not defined in the exam directive on 07.06.2022 that was prepared by HEM-TUYEK EAEG. The statements "The decision authority for the conditions not included in this directive rests with the HEM-TUYEK Executive Board" and "Required conditions for recertification will be announced later with a directive" was added to the directive (3).

Materials and Methods

In our study, the regulations, history and results of the Hematology Proficiency Examinations applied in our country were examined. The data were obtained from TSH and HEM-TUYEK secretariat. The dates of the exams, the number of applications to the exams, and the number of successful and unsuccessful participants were also evaluated.

Results

TSH Proficiency Exam questions were prepared by the commission that consisted of professors and associate professors under the supervision and control of the Centre for Assessment, Selection, and Placement (OSYM) in the first years, and the first exam was administered by OSYM. The "First Hematology Proficiency Exam" prepared by TSH, preparations for which started in 2008 and conducted by OSYM, was held on Sunday, December 5, 2010, in Ankara. According to the data of TSH, 10 proficiency exams have been held in our country as of 2010. Except for the first one held by OSYM, eight of the exams were held during the national congress of hematology (NCH) (3).

The exam questions are selected by the "Proficiency Board" among the questions that are sent by TSH Scientific Sub-Committees. The exam consists of 80 questions in total. The first 40 questions consist of common questions for adults and pediatrics, and the next 40 questions consist of specific questions for the science discipline.

The data of the Ministry of Health Registration and Accreditation Department could not be reached. The TSH secretariat reported the number of adult hematology specialists working in Turkey as of June 2023 as 457, the number of pediatric hematology-oncology specialists as 280, and adult and pediatric hematology subspecialty research assistants continuing their training in 2023 as 182. A total of 107 hematologists have

proficiency certificates that they have acquired through the exam (3).

A total of 108 candidates have taken the proficiency exam since 2010. For this reason, the average of candidates who take the TSH proficiency written exam every year is 11. The highest participation in the exam was in 2012 with 20 candidates. The number of candidates who took the exams by year is given in Table I. A total of 53.7% (58 candidates) of the test takers were female and 46.3% (50 candidates) were male participants.

According to the results of the proficiency exam since 2010, all but 1 of the candidates (99.0%) were successful in the theoretical exam. The proficiency oral/practical exam was held on 29.04.2023 for the first time.

Among the 35 candidates who took the last 4 written exams, 31 are hematology assistants and 4 are hematology specialists. No distinction was made between the number of experts and assistants among the candidates who participated in the proficiency written exam administered in previous years.

Among the 9 candidates who took the most recent exam, 5 were working in a university hospital, 3 in a training and study hospital, and 1 in a city hospital. The information of the institution where the candidates who participated in the previous exams were working at the time of taking the exam could not be reached.

The distributions of the question and feasibility analyses according to the topics of the exams that were held before HEM-TUYEK could not be reached, but the distribution of questions and correct answers percentages according to the topics of the 10th Turkey Hematology Proficiency Exam held on April 29, 2023, are given in Table II.

A total of 87 hematologists from Turkey participated in the European Society of Hematology Exam (EHA), which has been applied since 2017.

In 2017: 5 candidates
In 2018: 6 candidates
In 2019: 18 candidates
In 2020: 4 candidates

Years	Number of Candidates	Hematology Assistants/ Specialists	Female	Male	Pass	Fail
1. Hematology Proficiency Exam (OSYM, 5 December 2010)	12	Unknown	10	2	12	0
2. Hematology Proficiency Exam (38th NCH 1 November 2012)	20	Unknown	9	11	20	0
3. Hematology Proficiency Exam (40th NCH 23 October 2014)	11	Unknown	6	5	11	0
4. Hematology Proficiency Exam (41.NCH 21 October 2015)	5	Unknown	2	3	5	0
5. Hematology Proficiency Exam (42nd NCH 20 October 2016)	13	Unknown	9	4	13	0
6. Hematology Proficiency Exam (43rd NCH 4 November 2017)	12	Unknown	6	6	12	0
7. Hematology Proficiency Exam (44th NCH 1 November 2018)	11	All were assistants	5	6	11	0
8. Hematology Proficiency Exam (45th NCH 1 November 2019)	5	All were assistants	3	2	5	0
9. Hematology Proficiency Exam (47th NCH 4 November 2021)	10	All were assistants	2	8	10	0
10. Hematology Proficiency Exam (Hacettepe University, Faculty of Medicine, 29 April 2023)	9	5 / 4	6	3	8	1
Total	108		58	50	107	1

In 2021: 17 candidates

In 2022: 16 candidates

In 2023: 21 candidates

Those who were successful in the EHA exam were given the TSH proficiency certificate directly.

Aside from these exams, HEM-TUYEK planned to issue a "Certificate of Competence in the Field of Hematology Medicine Specialization" to hematology specialists in 2023 for once without taking the hematology specialization proficiency exam. For this purpose, experts who meet the following conditions are requested to apply with a petition to the HEM-TUYEK secretariat until 31 December 2023.

* Being a professor/associate professor/physician lecturer for at least 5 years/currently working in an educational institution

* Providing a CV with an updated list of publications for the last 5 years

* Presenting the original certificate of expertise

and the accredited certificate for specialists who have received their hematology expertise abroad

* Submitting the document if there is a proficiency exam success certificate obtained from international organizations or the Turkish Hematology Association

* Presenting a document showing that hematology specialists who have academic titles who change institutions have a total of at least five years of educational role in different institutions that carry out training programs

* Presenting a document showing a total of five years of educator if he /she has worked as a trainer in different academic titles (5).

As of August 2023, a total of 45 physicians (35 professors, 8 associate professors, 2 assistant professors) have applied for this purpose.

The validity period of the "Certificate of Competence in the Field of Hematology Medicine Specialization", which will be submitted once

Table 2. The Distribution Of The Questions According To Topics And Correct Response Rates Of The 10th Turkey Hematology Proficiency Exam

Topic	Number of questions	Correct Response Ratios
Malignant Hematological Diseases	36	81.2%
Erythrocyte Diseases	11	69.7%
Conditions Requiring Emergency and Supportive Treatment	7	61.9%
Platelet Diseases	5	97.8%
Thrombotic Diseases	4	66.7%
Hematopoietic Stem Cell Transplantation	4	63.9%
Benign Leukocyte Diseases	4	66.7%
Blood Banking and Transfusion Medicine	4	86.1%
Bone Marrow Failure	4	80.6%
Research Methods	3	77.8%
Treatment Selection and Management of Treatment-Related Side Effects	3	92.6%
Genetic Bleeding Diseases	3	92.6%
Consultation Hematology	3	48.2%
Thrombosis and Hemostasis Laboratory Tests	2	77.8%
Management Of Special Circumstances	2	83.3%
Treatment Principles of Malignant Diseases	1	44.4%
Genetic Tests Associated with Hematology	1	11.1%
Immunophenotyping with Flow Cytometry	1	88.9%
Apheresis	1	100.0%
Morphology	1	77.8%

* The data were received from HEM-TUYEK Secretariat.

without an exam because it meets the necessary conditions, has been determined as 5 years and it was shared that at the end of five years, an application for re-certification will be required and the conditions for re-certification will be announced later with a directive (5).

Discussion

TSH has developed training programs in cooperation with the European Union of Hematology since the early 2000s. Hematology curriculum studies planned by the Ministry of Health were initiated with TUKMOS studies in 2010, and the first draft was created using the TSH curriculum in July 2011.

It was observed that participation in Board of Competency exams held by various associations is generally below the expected level in our country (6,7).

One of the main reasons for this may be the consideration that failing the exam will cause a loss of prestige. However, the fact that 99.00% of the candidates who took the proficiency exam administered by TSH were successful in the exam must eliminate this concern.

Although it is considered that the candidates who want to have a certificate by taking the proficiency exams are academicians or physicians who want to become an academician, when the TSH archives were evaluated, the fact that there were only 108 hematologists who took the written exam shows that the participation is extremely low. This present situation indicates that it is beneficial to conduct proficiency exams to develop the knowledge and skills that hematologists need professionally and that participation in these exams must be increased. Although it is not compulsory to have

a proficiency certificate, it can be considered an advantage for academics. Proficiency certificates have started to be added to associate professorship and professorship application files, but it is still debated whether proficiency certificates can be used as a criterion in associate professorship applications.

In Europe, specialization proficiency exams are conducted by UEMS. As of 2017, there are 34 member countries of UEMS. UEMS has 43 branches in the field of medical specialization (hematology is not included as a separate branch, but is evaluated within the branch of oncology), and studies are performed on the content and standardization of education in these specialties. Proficiency exams and certificates are recognized mutually among the member states of UEMS. Turkey is a member of UEMS and there is a mutual recognition of Proficiency certificates; however, such a mutual practice with the USA does not yet exist.

The first specialization certification within the scope of the European Specialization Field Proficiency was given in 1984 in the field of Anesthesia (2). In England, there are two institutions responsible for the specialty training and specialty examinations of physicians. The first is the General Medical Council (GMC), which makes arrangements to ensure that a fair mechanism is applied for physicians' access to the specialty and subsequent employment. Also, GMC ensures that standards are determined, maintained, supervised, and coordinated at all stages of education, including medical specialization training so that medical education is given at the best standards. The second mechanism, is the Royal Colleges, works to update the education in the relevant discipline and regularly organizes the necessary courses, training seminars, and also Specialization Proficiency Exams in the relevant discipline.

The European Hematology Examination project was initiated In 2015 by the Education and Curriculum committees of the European Society of Hematology (8). The European Hematology Examination aims to measure and evaluate this curriculum after the implementation of the European Hematology Curriculum. All hematologists can take the exam, but the target group is candidates who have just completed

their specialization training.

According to a survey with 25 presidents of the European National Society of Hematology in 2015, it was shown that 52% of countries had an exam at the end of their hematology training. Also, the majority of respondents (72%) supported conducting a European Hematology Knowledge Test (8).

The European Hematology Examination consists of 100 questions that cover 8 topics in the European Hematology Curriculum (9) (Table III). Candidates are given 2.5 hours to answer the questions. The exam is conducted on a secure online platform and each candidate answers the exam questions on an individual computer that is provided for this purpose (8).

When the curriculum associated with the questions in the European Hematology Examination and the question contents of the Turkish Hematology Proficiency Examination were evaluated, it was seen that only the health service provider was measured in the specialty proficiency exams, and the researcher's characteristics were not tested.

The cut-off score of the exam is determined by using Item Response Theory (IRT) according to the exams applied in previous years. For example, when determining the passing score in 2020, the exam results in 2017, 2018, and 2019 were evaluated.

The European Hematology Examination was administered for the first time in 2017 in Madrid, Spain with 64 candidates (52 candidates (81.2%) were successful in the exam) (10). The

Table 3. The Topics in the European Hematology Curriculum for 2023

1. Clinical hematology: Non-malignant hematology
2. Clinical hematology: Myeloid malignancies
3. Clinical hematology: Lymphoid malignancies and plasma cell diseases
4. Treatment of hematological disorders
5. Laboratory diagnoses
6. Thrombosis and hemostasis
7. Transfusion medicine
8. General skills

Table 4. The Number of the Candidates and Success Rates in the European Hematology Examination (10)

Years	The number of participants	The number of Turkish participants	Pass score	Number of successful candidates	Percentage of successful candidates
2017	64	5	Unknown	52	81.2%
2018	80	6	58	64	80,0%
2019	149	18	56	116	77.9%
2020	127	4	59	99	78,0%
2021	188	17	54	142	76,0%
2022	166	16	56	138	83,0%
2023	206	21	*	*	*

*Exam results for 2023 have not been announced yet

Second European Hematology Examination was held in Stockholm, Sweden in 2018, and a parallel session was held in Bern. The score of being successful in the exam was 58. A total of 80 candidates participated and 64 candidates (80.0%) were successful in the exam (11). The third exam was administered in 2019 in 6 countries and 149 candidates took the exam. The score of success was determined as 56 in the exam and a total of 116 candidates (77.85%) were successful in the exam (12). A total of 127 candidates participated in the fourth exam in 2020, which was administered in 12 countries. The score for success was determined as 59 in the exam, and 99 candidates (78%) were successful (13). A total of 188 candidates participated in the fifth exam in 2021 in 15 countries. The score of success was determined as 54 in the exam, and 142 candidates (76%) were successful in the exam (14). The sixth exam was administered in 2022 in 12 countries and a total of 166 candidates participated. The score of success was determined as 56 in the exam, and 138 candidates (83%) were successful in the exam (15).

In parallel to the main exam session in Germany (Frankfurt), exams were organized in 13 other countries (Armenia, Bulgaria, Croatia, Egypt, Estonia, Greece, Iraq, Jordan, Portugal, Saudi Arabia, Spain, Switzerland, and Turkey) and a total of 206 candidates took the final exam in 2023 (10). Participation can be increased by organizing exams in different countries at the same time.

Each year, the rate of successful candidates in the European Hematology Examination has been over 75%. The number of candidates who participated in the European Hematology Examination according to years and their success rates are given in Table IV.

The data regarding the country from which the candidates in the first 2 exams participated could not be reached and the details of the last exam held in 2023 have not been announced yet. However, the distribution of the candidates who participated in the European Hematology Exam between 2019-2022 according to the countries where they work is given in Table V.

The purpose of the European Hematology Examination is the participation of candidates who have just completed their hematology education. In the 2021 European Hematology Examination Report, it was stated that these candidates constituted 29% (56 candidates) of the candidates who took the exam and the exam achieved its purpose. The second majority of the candidates who took the exam consisted of 19% (37 candidates) who will complete their hematology education in one year (14).

Conclusion

The fact that the item analysis and content validity of the exams held before HEM-TUYEK were not reached was the limitation of this article. However, with the package program that analyzed the exam questions and results, which started to be used for the first time in 2023 and will be used in the next exams, detailed individual and collective analysis was possible. In this way,

Table 5. The Distribution of Participation in the European Hematology Exam in 2019-2022 according to Countries (10)

Countries	2019	2020	2021	2022	Total
Albania			6	1	7
Argentina	1				1
Armenia		5	6		11
Australia	1				1
Austria	2			3	5
Azerbaijan				2	2
Bahrain	2			1	3
Belgium	3			1	4
Bosnia and Herzegovina	1				1
Brazil	2				2
Bulgaria	1	7	4	8	20
Croatia	2		1		3
Estonia				3	3
Finland	1			2	3
France	1				1
Germany	2			1	3
Greece	12	10	7	13	42
Holland	5			1	6
India	4			1	5
Iraq	1	9	17	27	54
Ireland	2				2
Italy	2				2
Japan	1				1
Kazakhstan	1				1
Kuwait	1	11	8		20
Lithuania		1	2		3
Luxembourg	1	1	1		3
Mexican	1				1
Pakistan	1			1	2
Paraguay				1	1
Portugal	13	20	27	18	78
Romania	1			2	3
Saudi Arabia	3	27	21		51
Slovenia				1	1
South Africa	1				1
Spain	41	14	45	30	130

Sri Lanka	1				1
Sweden	1				1
Sweetcorn			11	9	20
Switzerland	10	18	15	16	59
Train	2			2	4
Tunisia				1	1
Turkey	18	4	17	16	55
United Kingdom	7			4	11
USA				1	1
Total	149	127	188	166	630

the difficulty levels, reproducibility, and success criteria of the questions will be provided more objectively. If the group preparing the exam questions receives assessment and evaluation training, the national proficiency exams will reach international standards.

When compared with the European Hematology Examination, it was seen that participation in the proficiency exam in our country is below expectations in this regard. Hematologists and hematology assistants in our country should be encouraged to take the National Proficiency Exams, which were previously administered by THD and as of 2023 by HEM-TUYEK, by showing that almost all of the candidates who have participated in the exam so far have been successful. Successful and relevant assistants and experts already have efforts to register their success by taking the exam. In order to encourage less successful candidates or those who are afraid of failure to take the exams, qualification certificates can be used to achieve different gains. These gains could include providing the most successful candidates with special training opportunities, such as "master classes" on a subject they would like to develop, an international congress or the opportunity to be an observer abroad for a limited period of time. In addition, the conditions for providing financial support to the project which is submitted by the most successful candidates (if deemed appropriate) and the conditions for the validity of the qualification certificate abroad should be investigated and developed. Proficiency exams contribute to the professional development of hematologists by allowing them to evaluate their knowledge and skills. The point to be emphasized

here is that these exams are not the goal; they are tools on the way of increasing personal awareness of the deficiencies in medical practice and self-improvement. Therefore, although the result of the exam is announced as "pass/fail" as a result of cut-off values determined according to certain criteria; both each candidate who participated in the exam and the training programs will be the final winner. Participants can gain awareness of their weaker issues, update themselves in this direction, and fulfill the requirements of continuing medical education more easily by evaluating their answers after the exam. Also, sharing the exam results with the trainers in general terms, not with the individual success scores, may enable the trainers to review and update their training programs. Also, it offers the trainers the opportunity to rearrange their training programs in line with TUKMOS, to serve a nationwide standardization in hematology education because the question content of these exams is prepared based on the clinical and interventional competency levels defined in the updated TUKMOS core curriculum.

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