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Original Article

# The Status of the Neurology Education from Resident's Perspective: A National Survey in Turkey

## *Türkiye'de Asistan Bakış Açısıyla Nöroloji Eğitiminin Durumu: Ulusal Anket*

*Hale Zeynep Batur Çağlayan[1], *Fahrettin Ege[2], Birgül Baştan[3], Gül Yalçın Çakmaklı[4], İrem Yıldırım Çapraz[1], Ethem Murat Arsava[5], *Mehmet Akif Topçuoğlu[5], İbrahim Arda Yılmaz[6], Ahmet Onur Keskin[7], Mehmet İlker Yön[8], Neşe Tuncer Elmacı[9], Kayıhan Uluç[9]

[1]Gazi University Faculty of Medicine, Department of Neurology, Ankara, Turkey
[2]Ufuk University Faculty of Medicine, Department of Neurology, Ankara, Turkey
[3]Haseki Training and Research Hospital, İstanbul, Turkey
[4]Hacettepe University Faculty of Medicine, Institute of Neurological Sciences and Psychiatry, Ankara, Turkey
[5]Hacettepe University Faculty of Medicine, Department of Neurology, Ankara, Turkey
[6]Mersin University Faculty of Medicine, Department of Neurology, Mersin, Turkey
[7]Dokuz Eylül University Faculty of Medicine, Department of Neurology, İzmir, Turkey
[8]Ankara Numune Training and Research Hospital, Clinic of Neurology, Ankara, Turkey
[9]Marmara University Faculty of Medicine, Department of Neurology, Ankara, Turkey

**Hale Z. Batur Çağlayan ve Fahrettin Ege bu çalışmaya eşit katkıda bulunmuşlardır ve birinci yazarlığı paylaşmaktadırlar.*

## Summary

**Objective:** In Turkey, a national program is governed by National Board of Medical Specialties (BMS), Commision of Syllabus Creation and Standardization to improve and standardize residency training. In the present study, we aimed to assess neurology residency training programs and working conditions in Turkey based on a national survey among residents.

**Materials and Methods:** All neurology residents were invited to complete a 39-question survey via e-mail, which contained a link to the online questionnaire form. Data on the residents' working conditions, education and research activities were collected.

**Results:** Out of 450 neurology residents, 136 (30.2%) completed the survey. Hundred nineteen (88%) of these residents reported working >8 h per day and 116 (85%) reported they were on night duty >3 d per month. Overall, 82% of the residents were not satisfied with the educational program in their department. Half of the residents reported that their institution did not have a structured education program. Eventhough, 70% reported that they contributed to clinical or basic research conducted at their clinics only 35% of them noted that they received sufficient academic supervision. Finally, 126 (94%) of the residents reported that the pay-for-performance healthcare system negatively affected their training.

**Conclusion:** The main reasons of dissatisfaction with neurology training in Turkey seem to be the insufficiency in educational programing, nonstandardized working hours and the pay-for-performance healthcare system. The present findings can help standardize and improve neurology training program founded by National Board of Medical Specialties (BMS). (Turkish Journal of Neurology 2014; 20:72-75)

**Key Words:** Education, residency, neurology, Turkey

## Özet

**Amaç:** Türkiye'de nöroloji asistan eğitimini iyileştirmek ve standardize etmek için Tıpta Uzmanlık Kurulu Müfredat Oluşturma Sistemi Komisyonu tarafından hazırlanan ulusal bir program uygulanmaktadır. Bu çalışmada, asistanlar arası yapılmış ulusal bir anketi temel alarak, mevcut nöroloji eğitim programlarını ve çalışma koşullarını değerlendirmeyi amaçladık.

**Gereç ve Yöntem:** Tüm nöroloji asistanları; 39 soruluk bir ankete katılmaları için, çevirim-içi formuna bağlantı içeren e-posta aracılığıyla davet edildiler. Asistanların çalışma koşullarına, eğitim ve araştırma faaliyetlerine dair veriler toplandı.

**Address for Correspondence/Yazışma Adresi:** Hale Zeynep Batur Çağlayan M.D, Gazi University Faculty of Medicine, Department of Neurology, Ankara, Turkey Phone: +90 312 202 53 29 E-mail: halezeynep@gazi.edu.tr
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**Bulgular:** Dört yüz elli nöroloji asistanından 136'sı (%30,2) anketi tamamladı. Bunların içinden 119 (%88) asistan günde 8 saatten fazla çalıştığını ve 116'sı (%85) ayda 3'ten fazla nöbet tuttuğunu bildirdi. Asistanların 112'si (%82) bölümlerindeki eğitim programından memnun değildi. Asistanların yarısı, çalıştığı kurumlarda yapılandırılmış bir eğitim program olmadığını belirtti. Her ne kadar %70'i kliniklerinde yürütülen klinik veya temel araştırmalara katıldığını bildirdiyse de, sadece %35'i yeterli bir akademik denetimden geçirildiğini belirtti. Son olarak, asistanlardan 126'sı (%94), performans sisteminin eğitimlerini olumsuz yönde etkilediğini bildirdi.

**Sonuç:** Türkiye'de nöroloji eğitimindeki memnuniyetsizliğin başlıca sebepleri, yetersiz eğitim programları, standart olmayan çalışma saatleri ve sağlık alanında performansa dayalı ek ödeme sistemidir. Bu bulgular, Tıpta Uzmanlık Kurulu'nun geliştirmiş olduğu nöroloji eğitim programını iyileştirmek ve standardize etmek için yol gösterebilir. (Türk Nöroloji Dergisi 2014; 20:72-75)

**Anahtar Kelimeler:** Eğitim, asistanlık, nöroloji, Türkiye

## Introduction

Numerous efforts have been made to standardize neurology training for residents. Most of the approaches have developed to minimize heterogeneity among residency training programs published in the literature are based on experiences in developed countries (1-3). In Turkey, residency training is governed by a central agency, the National Board of Medical Specialties (BMS), Commission of Syllabus Creation and Standardization, which focuses on improving and standardizing postgraduate education. Currently, according to BMS criteria, neurology residency training is provided either by neurology departments of university hospitals or neurology clinics of state education and research hospitals. The length of neurology residency is 4 years in total, including month-long internal medicine, endocrinology and cardiology rotations, and three-month long child neurology, psychiatry and radiology rotations.

The present study aimed to assess the quality of neurology residency training programs in Turkey based on the responses of residents to a national survey. Additional goals were to gather data on the residents' working conditions and level of job satisfaction. We think such data might help the development of national strategies for improving and standardizing neurology training programs.

## Materials and Methods

A web-based, multiple-choice questionnaire was developed by the Young Neurologists Study Group, which is a subgroup of Turkish Neurology Association (TNA) (Appendix A). All residents were invited to participate in the survey via e-mail, which contained a link to the online questionnaire form (www.SurveyMonkey.com). The survey was composed of 2 main sections and included 39 questions. The first section collected data on residents' working conditions and the second section gathered information on residents' education and research activities. Categorical variables were expressed as n (%) and the $\chi^2$ test was used to analyze bivariate relationships. All statistical analyses were performed using SPSS v.15.0 for Windows (SPSS, Inc., Chicago, IL, USA).

## Results

Of the 450 neurology residents in training at the time of the study, 136 completed the survey (response rate: 30·2%). In all, 87 (64%) of the responders were from university hospitals and 49 (36%) were from state education and research hospitals. (Supplemental Data: Survey Questions and Responses)

**General Information and Working Conditions**

The number of post-graduate year (PGY) -1, -2, -3 and -4 residents was 19 (14%), 30 (22%), 37 (27%), and 50 (37%), respectively. The distribution of residents in each PGY did not differ significantly between the university and state research hospitals (p=0·417, Figure 1). In total, 119 (88%) residents reported working >8 h $d^{-1}$ and 116 (85%) reported that they were on night duty >3 d $month^{-1}$. The frequency of night duty decreased as PGY increased (p<0·001). Importantly, 93% of the residents reported that they continued to work the day following night duty with no time off. Only 10% of the residents had an advanced level of foreign language (mostly English), whereas the level of foreign language proficiency was intermediate in 46%.

**Education and Research Activities**

In all, 68 (50%) of the residents at both university and state research hospitals reported that their institution did not have a structured education program. The total time allocated to education reported by 107 (79%) of the residents was ≤3 h $week^{-1}$. The number of hours allocated to education was significantly higher among the residents undergoing training at university hospitals than those at state research hospitals (>3 h $week^{-1}$ for education: 29% vs. 8%; p=0·005). In all, 120 (88%), 98 (72%) and 106 (78%) of the residents reported that ≥1 h $week^{-1}$ as allocated for seminars, case discussions and journal club. On the other hand, 59 (43%) of the residents reported that educational lectures were provided. More importantly, 95 (70%) of the residents reported that they were able to participate in most of the available educational activities, where 14% missed a significant portion of educational activities due to clinical duties. Only 61 (45%) of the residents reported that they had annual exams to test their proficiency and skills. Overall, 112 (82%) of the residents were not satisfied with the educational program in their department.

The length of education was reported to be appropriate by 86 (63%) of residents. The diversity of cases encountered in the course of training and departmental/institutional technical equipment and facilities (radiological facilities, intensive care unit, electroencephalography and electromyography laboratories) were considered to be satisfactory by 109 (81%) and 85 (63%) of the residents, respectively. One hundred and eleven (83%) residents reported that it was easy to consult their patients to their professors. On the other hand, 100 (74%) and 133 (98%) residents were very unhappy with the level of education regarding neurointensive care and polysomnography (PSG), respectively. Only 28 (21%) and 37 (27%) of the residents reported that they were entirely satisfied with their electroencephalography (EEG) and electromyography (EMG) training, respectively. The ratio of residents who thougt that they got sufficient training to handle emergent medical conditions was 78 (59%), whereas 86 (64%) thought that they were sufficiently trained to run an inpatient unit; however, the level of satisfaction and sense of self-sufficiency increased with PGY. Rotations in other departments were deemed to be sufficient by 89 (65%) residents. The rotations, which were

considered unnecessary, were the ones in emergency department and endocrinology. One hundred and eight of the residents (80%) thought that it would be rewarding to visit neurology departments of other institutions.

Ninety three of the residents (70%) reported that they contributed to clinical or basic research conducted at their clinics; however, only 47 (35%) of the residents reported that they received sufficient academic supervision. Moreover, only 40 (31%) reported that they received sufficient feedback from their professors regarding career planning. Ninety eight (73%) of residents had the opportunity to attend 1-2 national or international scientific meetings each year. Access to written and/or online scientific information was considered sufficient by 118 (87%) of the residents. Finally, 126 (94%) of residents reported that the pay-for-performance healthcare system negatively affected their training.

## Discussion

Resident training in Turkey, similar to its counterparts worldwide, is problematic due to both deficient infrastructures and legal loopholes. There are no regulations in Turkey concerning working conditions of residents; therefore, each institution has its own set of rules. The Accreditation Council for Graduate Medical Education (ACGME) in the US stipulates that residents can work a maximum of 80 h week-1 and a maximum shift of 24 h (4), whereas in Europe the maximum work week is 40-80 hours (1). The present findings show that a considerable number of residents reported that they couldn't rest sufficiently following night shifts. Continuous duty time is about 36 h on occasion, and statutory protection regarding residents' working hours has not been enforced to date.

Worldwide, residency programs are 3-7 years in duration (1,2). In the European Union (EU) 5-year neurology training is the most preferred approach and the European Union of Medical Specialists/European Board Examination in Neurology (UEMS-EBN) recommends ≥5 years of training performed at ≥2 centers (2). The duration of neurology residency programs in Turkey, which is not a member of the EU, was 4 years prior to 2003, it was extended to 5 years between 2003 and 2007, and then it was again shortened to 4 years due to healthcare policies. Although most of the residents considered that 4-year residency was sufficient, they also reported that neurology training in various theoretical and practical fields was lacking, especially EEG, EMG, PSG, neuro-intensive care and neurological emergencies. These proportions

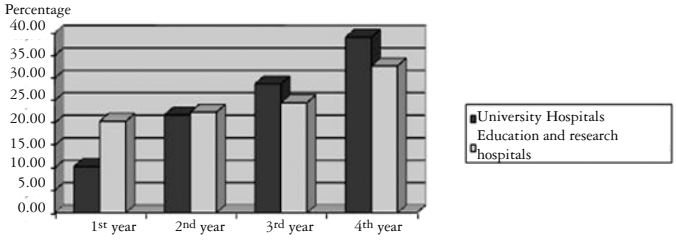


**Figure 1.** The distribution of neurology residents at university and state education and research hospitals according to post-graduate years.

are significantly higher when compared to reports originating from US (5). In addition, the present findings indicate that most of the institutions offering neurology resident training did not use a structured curriculum. Another survey study from Turkey among pathology resident represantatives showed that 73% of the institutions had no structured education programme (6).

Furthermore, classroom training-including lectures-was not offered regularly, despite their inclusion in the annual schedules. Considering that various US residency programs cover 2-3 conferences each day (5), the 1-2 weekly lectures offered by residency programs in Turkey are quite insufficient. An Italian study reported that seminars were offered less than once weekly at 60% of educational institutions (7). Similarly, residency programs in Poland were reported to lack structured training and include little theoretical education (5). Such findings indicate that residency training is some parts of Europe remains problematic. A large-scale study that included 1069 residents from various residency programs in Turkey reported that 67% of the residents reported that the theoretical training offered was inadequate (8). In the same manner, 68% of the cardiology residents and 50% of the family medicine residents are not satisfied with their training, according to corresponding national surveys in Turkey (9,10). In contrast, a study from the US reported that 90% of neurology residents were satisfied with their training (11). Nonetheless, TNA offers a variety of educational programs, including a well-structured theoretical course that encompasses most neurological subjects that is given prior to the annual national board examination, in addition to various other national and international subspecialty training activities, and web-based courses, and live seminars.

ACGME in the US and UEMS-EBN in Europe have outlined the basic principles of neurology training (4,12). In addition, medical association boards have been working on establishing core curricula. The recently founded BMS in Turkey is a promising step in the development of a standardized core curriculum and programing accreditation; however, standardized programs are currently not in place and accreditation procedures remain to be addressed by the BMS.

Although the response rates of this survey is low, the results represent both university and research hospitals uniformly. The present findings show that most of the neurology residents were not satisfied with the quality of neurology training in Turkey, which was primarily related to insufficient and irregular training, lack of sufficient educational programming, non-standardized working hours, and the negative impact of a pay-for-performance healthcare system. Since the BMS, Commission of Syllabus Creation and Standardization was established in Turkey, the harmonization of national neurology training curriculum has been provided basically and the progress in education has been continued. We think the present findings can help the process of standardizing and improving the neurology resident training in Turkey.

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