



ARAŞTIRMA / RESEARCH

Effect of graduation centers on the academic career of orthopedic surgeons in Turkey

Mezuniyet merkezlerinin Türkiye'deki ortopedi cerrahlarının akademik kariyerine etkisi

Hanifi Üçpunar¹, Yalkın Çamurcu¹, Adem Çöbden², Seçkin Özcan¹, Hakan Saygılı¹, Hakan Sofu¹

¹Erzincan University Faculty of Medicine, Department Orthopedics and Traumatology, Erzincan, Turkey

²Sivas Numune Hospital, Department: Orthopedics and Traumatology, Sivas, Turkey

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Abstract

Purpose: The aim of this study was to assess whether orthopedic surgeons' graduation centers affect their academic career.

Materials and Methods: In this observational study, we have reached the education and working information of 1767 orthopedic surgeons currently working in Turkey. Orthopedic surgeons' graduation centre and city, current affiliation, current academic status and duration of practice were investigated through web. According to their graduation centre, orthopedic surgeons were divided into two groups as a university hospital and training and research hospital.

Results: Orthopedic surgeons' current affiliations were significantly associated with their graduation centres and cities. Besides, orthopedic surgeons graduated from university hospitals were more likely to have an academic career than those graduated from training and research hospitals; however, no significant association was found between the city of graduation and academic career. According to regression analysis, orthopedic surgeons graduated from university hospitals were more likely to affiliate in university hospitals and private hospitals.

Conclusion: Orthopedic surgeons graduated from university hospitals were significantly more likely to affiliate in university hospitals and to have an academic career in Turkey.

Key words: Orthopaedics, academic, university, training.

Öz

Amaç: Bu çalışmanın amacı, ortopedi cerrahlarının mezuniyet merkezlerinin akademik kariyerlerini etkileyip etkilemediğini değerlendirmektir.

Gereç ve Yöntem: Bu gözlemsel çalışmada, Türkiye'de çalışan 1767 ortopedi cerrahının eğitim ve çalışma bilgilerine ulaştık. Ortopedi cerrahlarının mezuniyet merkezi ve şehri, güncel çalışma yeri, güncel akademik durumu ve meslekteki çalışma süresi internet üzerinden araştırıldı. Mezuniyet merkezlerine göre ortopedi cerrahları, üniversite hastanesi ve eğitim ve araştırma hastanesi olmak üzere iki gruba ayrıldı.

Bulgular: Ortopedi cerrahlarının mevcut çalıştıkları yerlerin mezuniyet merkezleri ve şehirleri ile anlamlı ilişkisi vardı. Ayrıca, ortopedi cerrahlarının akademik statüleri mezuniyet merkezleri ile anlamlı bir ilişki içerisindeydi; ancak, mezuniyet şehri ve akademik kariyer arasında anlamlı bir ilişki bulunmamıştır. Regresyon analizlerine göre, üniversite hastanelerinden mezun olan ortopedi cerrahlarının üniversite hastaneleri ve özel hastanelerde çalışma olasılıkları daha yüksekti. Ayrıca, üniversite hastanelerinden mezun olan ortopedi cerrahlarının, eğitim ve araştırma hastanelerinden mezun olanlara göre akademik bir kariyere sahip olma olasılığı daha yüksekti.

Sonuç: Türkiye'de üniversite hastanelerinden mezun olan ortopedi cerrahlarının üniversite hastanelerinde çalışma ve akademik kariyere sahip olma olasılığı daha yüksekti.

Anahtar kelimeler: Ortopedi, akademik, üniversite, eğitim.

Yazışma Adresi/Address for Correspondence: Dr. Hanifi Üçpunar, Erzincan University Faculty of Medicine, Department Orthopaedics and Traumatology, Erzincan, Turkey E-mail: hanifiucpunar@gmail.com

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INTRODUCTION

In Turkey, orthopedics and traumatology department was founded together with paediatric surgery in late 1800s, and later established as a separate academic department. From Akif Sakir Sakar, the first resident of orthopedics and traumatology, to date; many orthopedic surgeons were graduated from various universities as well as training and research hospital clinics¹. Orthopedics and traumatology departments were first founded in Istanbul, Ankara, and Izmir, which are the biggest cities of Turkey. Then, these clinics were founded at training and research hospitals in the same cities. In the early years, the specialty of orthopedics and traumatology was done only in universities. Orthopedics and traumatology clinics have done their own examinations for the recruitment of research assistants. However, in 1987, for the first time by the “Tıpta Uzmanlık Sınavı (TUS)”, the research assistants were admitted to the clinics with a central examination. Unlike assistant education, even now, the criteria for the recruitment of academic staff are not the central examinations but the specific requirements of the universities. Over the years, training and research hospitals have gained an academic environment as university hospitals. Today, number of orthopedics and traumatology residents at university clinics is close to those at training and research hospital clinics. Besides, with the foundation of “Sağlık Bilimleri University” in 2015, all training and research hospitals were gathered under the same roof.

Several factors influencing the decision for academic career after graduation have been investigated previously in the literature²⁻⁴. However, no study could be found reporting the effect of the training centre on the future academic career of orthopedic residents. The aim of this study was to assess whether orthopedic surgeons' graduation centre affect their academic career. We hypothesised that, orthopedic surgeons graduated from university hospitals may be more likely to have an academic career and academic affiliation than those graduated from training and research hospital.

MATERIALS AND METHODS

This observational study was conducted by collecting data through web. We have reached the education and working information of 1767 orthopedic surgeons currently working in Turkey. Orthopedic

surgeons' graduation centres and cities as well as their current affiliation, current academic status and duration of practice were investigated through web. Surgeons graduated from the first eight biggest cities of Turkey, following as: Adana, Ankara, Bursa, Gaziantep, İstanbul, İzmir, Kayseri and Konya were included in the current study. The reasons of including first eight biggest cities of Turkey were: (1) to reach maximum number of sample size in similar educational institutions, (2) and to evaluate similar cities according to socio-economic level to avoid any other confounding factors. Orthopedic surgeons who had less than 2 years of practice were excluded from this study for eliminating the duration of “compulsory government service” of the doctors in Turkey to evaluate the current affiliation correctly.

According to their graduation centre, orthopedic surgeons were divided into two groups as university hospital and training and research hospital. Orthopedic surgeons' current affiliations were grouped into 4 categories as (1) government hospital, (2) training and research hospital, (3) university hospital, and (4) private hospital. Orthopedic surgeons with the current titles of assistant professor, associate professor and professor were grouped as academic degree and the others were grouped as non-academic degree.

Statistical analysis

The comparison of two categorical data was performed by the Pearson Chi-Square test. Then, multinomial logistic regression analysis was performed to assess the association between the graduation centres and current affiliation.

RESULTS

The education and working information of 1767 orthopedic surgeons currently working in Turkey were investigated in this study. Eight hundred and forty-two of 1767 (48%) orthopedic surgeons were graduated from university hospitals and the remaining 925 (52%) were graduated from training and research hospitals. The mean duration of practice was 16.4 ± 9.8 years for surgeons graduated from university hospital and 14.8 ± 7.9 years for those graduated from training and research hospital. Three hundred and sixty-nine of 1767 (21%) orthopedic surgeons had an academic degree where as 1398 had no academic degree (79%).

Orthopaedic surgeons' current affiliations were significantly associated with their graduation centres and cities ($p < 0.001$ and $p < 0.001$, respectively) (Figure 1). Besides, orthopedic surgeons graduated from university hospitals were significantly more likely to have an academic career than those who were graduated from training and research hospitals ($p < 0.001$); however, no significant association was found between city of graduation and academic career ($p = 0.201$) (Figure 2).

According to regression analysis, orthopedic surgeons graduated from university hospital were significantly more likely to affiliate in university hospitals and private hospitals ($p < 0.001$ and $p < 0.001$, respectively). Besides, orthopedic surgeons graduated from Adana, Ankara, Bursa, İstanbul and İzmir were more likely to affiliate in university hospitals than other cities. No significant association was observed between city of graduation and affiliating in government hospitals, training and research hospitals or private hospitals.

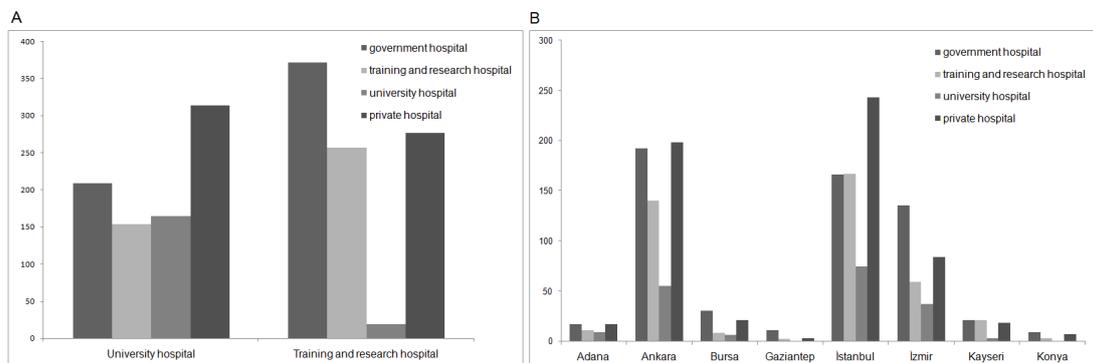


Figure 1 - The distribution bar charts of orthopedic surgeons' current affiliations according to their (A) graduation centres and (B) cities.

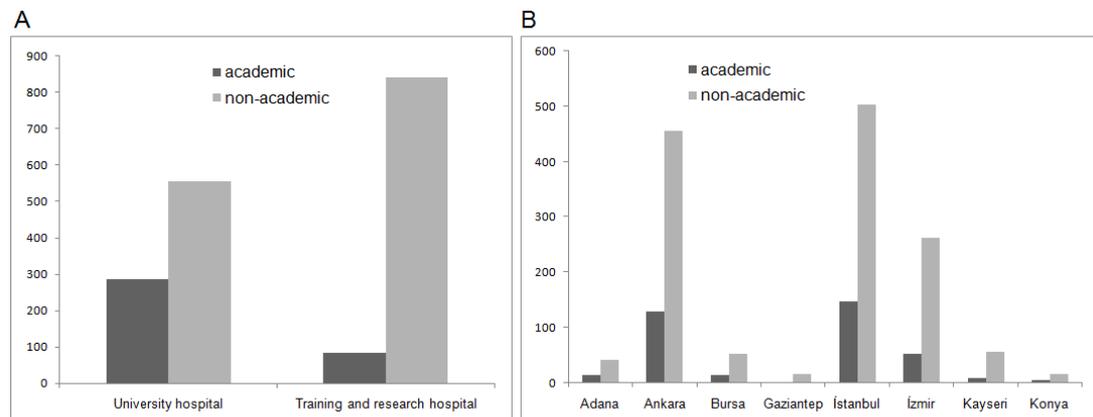


Figure 2. The distribution bar charts of orthopedic surgeons' current academic degrees according to their (A) graduation centre and (B) cities.

DISCUSSION

Today, orthopedics and traumatology has reached an advanced level in Turkey with the contributions of

the past scholars. University clinics have undertaken training the future orthopedic surgeons as well as academicians for many years. Since 1960's, training and research hospitals have also continued this

education successfully in Turkey. The interest for future academic career in orthopedics and traumatology had been investigated by several studies in the literature. Park et al reported that; completion of a research fellowship, graduation from a top-20 medical school, and desire to become an academic surgeon were mostly associated with the choice of academic career². Fan et al. investigated the academic career of their department's past residents via "Google", and authors observed that orthopedics residents choosing academic career had increased number of publications during residency³. In their study, Ahn et al. sent a survey to orthopedics and traumatology residents and chairs about future research activity; the authors found that having primary authorship of a study was the main predictive of future research activity⁴. In summary, all these studies mentioned above emphasized the impact of publication and research desire in future academic career.

Apart from other studies in the literature, we aimed to investigate orthopedic surgeons' academic career choices by evaluating their graduation centre and city. Previous studies reported increased publication rates among young orthopedic surgeons in recent years^{5,6}. As known, research productivity is an important factor for the future academic career and a necessary condition for affiliating in a university. In the current study, we observed that orthopedic surgeons graduated from university hospitals are significantly more likely to have an academic career and academic affiliation. The main reason of this issue may be related to the more academic staff and published articles in university clinics than training and research hospitals. When we reviewed the published articles about orthopedics between 2012 and 2014, 324 articles were published by the scholars of training and research hospitals where as this number was two times more in university hospitals with 738 articles⁷.

In this study, we observed that the city where the orthopedic surgeon graduated from had no impact on their future academic career; however, it was significantly associated with affiliating in university hospital. Our results showed that, academic affiliation was highest in orthopedic surgeons graduated from both university and training and research hospitals of Ankara, İstanbul and İzmir. These cities have also highest number of graduated orthopedics and traumatology residents than other cities. When we reviewed the statics, five university from Ankara (Hacettepe, Ankara, Gazi, Baskent, and

Gülhane Universities Medical Schools), two university from İstanbul (İstanbul and Cerrahpasa Universities Medical Schools) and two university from İzmir (Ege and Dokuz Eylül Universities Medical Schools) were ranked in the top-10 list according to the number of articles that have been published in international peer-reviewed journal⁷. Although İstanbul has the highest number of orthopedics and traumatology graduation centres, Ankara was the most successful city with the highest number of articles published by the scholars⁷.

Our study has several limitations. Firstly, we evaluated graduation centres of orthopedic surgeons for the determination of academic career. Academic career may also be influenced by the number of articles and presentations. Secondly, we did not include education and training centers or universities outside the 8 largest cities. However, this was planned to create a homogeneous study cohort. Lastly, one of the other controversial issues in our study was to not classify the chief assistant staff in education and research hospitals as an academic career. In addition, some universities in our country require working for a certain period without academic title to take the title of assistant professor and associate professor in the university. We did not classify these two groups as an academic title, because whether these titles are true academic staffs is controversial. Nevertheless, this study reported the information of a large cohort with 1767 orthopedic surgeons. Besides, regression analyses were performed to assess multiple variables. The main strength of the current study was being the first study in the literature investigating the academic career of orthopedic surgeons in Turkey by comparing their graduation centres, and cities. In addition to that, this study evaluated nearly one third of orthopedic surgeons currently working in Turkey and evaluated the academic choice of orthopedic surgeons who had a mean 15 years of practice, that gave us valuable information about the academic career since 2000s in Turkey.⁴

According to our results, orthopedic surgeons graduated from university hospitals were significantly more likely to choose academic career in Turkey. This study gave valuable information about the impact of university hospitals on the academic career of orthopedic surgeons. Besides, this information may guide faculty of medicine students who have a desire for academic career in orthopedics and traumatology. On the other hand, it should not be forgotten that training and research hospitals, which had a valuable

contribution to the evolution of orthopedics and traumatology in Turkey, also had an academic environment with the advantage of specific patient populations and years of experience.

Yazar Katkıları: Çalışma konsepti/Tasarımı: GÖ; Veri toplama: GÖ; Veri analizi ve yorumlama: GÖ; Yazı taslağı: GÖ; İçeriğin eleştirel incelenmesi: GÖ; Son onay ve sorumluluk: GÖ; Teknik ve malzeme desteği: GÖ; Süpervizyon: GÖ; Fon sağlama (mevcut ise): yok.

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REFERENCES

1. Tanacan H. Turk Ortopedisinin Tarihcesi. Acta Orthop Traumatol Turc. 1993;27:151-9.
2. Park DK, Rhee JM, Wu B, Easley K. Factors related to choosing an academic career track among spine fellowship applicants. Spine (Phila Pa 1976). 2013;38:425-33.
3. Fan B, Raman T, Benevenia J, Berberian W. Predictors of career choice in academic medicine among orthopedic surgery residents. J Bone Joint Surg Am. 2014;96(1):e6.
4. Ahn J, Donegan DJ, Lawrence JT, Halpern SD, Mehta S. The future of the orthopedic clinician-scientist: part II: Identification of factors that may influence orthopedic residents' intent to perform research. J Bone Joint Surg Am 2010;92:1041-6.
5. Hake ME, Lee JJ, Goulet JA. Publication productivity of early-career orthopedic trauma surgeons. Orthopedics. 2016;39:e26-30.
6. Namdari S, Jani S, Baldwin K, Mehta S. What is the relationship between number of publications during orthopedic residency and selection of an academic career? J Bone Joint Surg Am. 2013;95:e45.
7. TÜBİTAK ULAKBİM, Sağlık Bilimlerinde Türkiye'nin Bilimsel Yayın Performansı (2012-2014), <http://cabim.ulakbim.gov.tr/bibliyometrik-analiz/turkiye-bilimsel-yayin-performans-raporlari/>.