

Contribution of medical science in Turkey to the scientific world and the field of ophthalmology

A contribuição da ciência médica turca para o mundo científico e para a oftalmologia

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Readers of journals on ophthalmology have noted a shift in the number of contributions from traditional sources, such as the USA, England, Germany, and Japan, in the 20th century to other sources, such as China and Turkey, in the 21st century. There has been a greater presence of Turkish ophthalmological studies in the *Arquivos Brasileiros de Oftalmologia* (ABO; Brazilian Archive of Ophthalmology) since the ABO broke the barriers of internationalization. Within the last decade, the journal has been annually gifted with higher quality contributions from Turkey. The following paragraphs describe the changes made in Turkey regarding science and education, particularly in the field of ophthalmology, which will help reader understand the higher quantity and quality of medical and ophthalmology science in Turkey.

A new era in modern Turkey began with the foundation of the Turkish Republic in 1923, which rose from the remains of The Ottoman Empire. The first census of the young republic conducted in 1927 revealed that the population was approximately 13 million⁽¹⁾. Being a war-torn country over a long period of time, the young Turkish Republic included 63 cities. In 1935, approximately 81.5% of the adult population was illiterate (females, 92%; males, 69.2%). Eight decades later, the population increased to 75 million and was distributed in 81 cities⁽¹⁾. As the years passed and the country became more developed, the literacy rate had drastically increased to almost 96%.

The entire country had only 1,078 physicians in 1928, which had increased to 133,775 in 2013. Turkey has also made substantial developments in research and development (R&D) in recent years, as evidenced by the R&D/gross domestic product ratio, which increased from 0.6% in 2006 to 1.06% in 2015⁽¹⁾, and the increase in the number of scientific publications per million inhabitants from 85 in 2000 to 372 in 2015 (5,442 in 2000 to 29,139 in 2015 in absolute numbers)⁽¹⁾. Regarding the number of scientific publications, Turkey's place in world rankings had increased from 20th in 2006 to 18th in 2015. Likewise, R&D expenses increased from 2.3 billion USD in 2006 to 6.3 billion USD in 2015. Patent applications to the Turkish Brand and Trademark Office (by domestic and foreign entrepreneurs) increased from 5,165 in 2006 to 16,778 in 2016^(1,2). The Turkish Council of Higher Education launched a research expansion program to improve the competitiveness of Turkish universities by creating new research centers and positions, which resulted in more funding and positions. The recipient of R&D grants will earn the title of a research university due to the potential to produce internationally competitive research. Besides, the Ministry of Health just established the Health Institutes of Turkey, which is modeled after the US National Institute of Health. Taken together, research spending increased more than 10-fold over the past 10 years in Turkey⁽²⁾.

This significant progress can also be observed in the field of ophthalmology. The Turkish Society of Ophthalmology was established in 1928. Since then, the number of ophthalmologists has increased to 5,000. The ophthalmology residency programs are highly competitive with an admission rate of <1% of all candidates. The 4-year residency program includes outpatient and inpatient care, surgery, basic and clinical research, and rotations in other related disciplines. After completion of the residency program, ophthalmologists choose either to work in a state hospital, private practice, or academia. Most research conducted in Turkey is published in four Turkish national ophthalmology journals; however, there has been a recent significant predilection toward the ABO Journal, which has a fair and rapid review process and is indexed in Science Citation Index Expanded. Moreover, there is no publication fee. The first Turkish contribution to the journal was a letter to the editor on Susac syndrome by Yildirim et al. in 2013⁽³⁾. Since then, 134 articles from Turkish groups have been published in the ABO.

In the current era of globalization, sharing of new information is straightforward and the use of the internet had fostered new collaborations. The significant contributions of Turkish ophthalmologists to the ABO are a consequence of this new era of information exchange across borders. This global connection seems promising, mainly deriving

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its power from a young and well-educated population of Turkish ophthalmologists whose contributions have improved the quality of the journal. The Editorial Board of the ABO is looking forward to receiving further high-quality papers from Turkey. Moreover, the ABO welcomes other nations to follow the efforts in Turkey to increase investments in science and to submit original papers to scientific journals that are open access with no publication costs to the authors.

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