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Zekeriya Aktürk, Memet Işık

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The Need for Medical Doctors in Turkey: A Projection Plan from 2013 to 2033 with Emphasis to Family Medicine

Türkiye’de Hekim İhtiyacı: Aile Hekimliği Özelinde 2013-2033 Yılları İçin Bir Projeksiyon Çalışması

AUTHORS / YAZARLAR

Zekeriya Aktürk
Department of Family
Medicine, Atatürk
University Faculty of
Medicine, Erzurum,
Türkiye

Memet Işık
Department of Family
Medicine, Atatürk
University Faculty of
Medicine, Erzurum,
Türkiye

ABSTRACT

Introduction: While European average of physicians per 1000 citizens is around 3.4, this ratio is 1.7 for Turkey, showing a lack of physician workforce. On the other hand, the number of first year medical students increased from 6492 in 2008 to 8453 in the year 2012. Proper needs planning and appropriate actions are of utmost importance in order to ensure the best possible quality and quantity of medical doctors in Turkey.

Aim: In this study we aimed to make a projection plan for the next two decades, with regard to the number of medical students and expected number of graduates and tried to propose rational student enrollment quotas.

Methods: Number of medical students enrolled each year, number of yearly graduates from medical faculties, number of family medicine trainers, trainees, new residency positions, ratio of graduates expected to join primary care, and proportion of doctors leaving the practice were taken into consideration during the calculations.

Results and Discussion: We expect to have 36793 doctors in the primary care by the year 2019. This will change the population / family physician ratio from 3653 to 2201. However, also the mean number of visits per capita in Turkey has an increasing trend (3.2 in 2002 – 8.2 in 2012), which should be taken into consideration when planning the need for doctor workforce.

Conclusion: The rapid increase in the number of medical graduates must urgently be revised and adjusted to a number enough to maintain continuous physician need in Turkey. Years 2013 and thus 2019 will be critical.

Keywords: physician need, workforce planning, family medicine, medical education

ÖZET

Giriş: Avrupa’da 1000 kişilik bir nüfusa ortalama 3,4 hekim düşerken bu oranın Türkiye için 1,7 civarında olması önemli bir hekim açığını göstermektedir. Bununla birlikte Türkiye’de tıp fakültelerinin kontenjanları son yıllarda hızlı bir artış göstermekte olup 2008 yılında 6492 öğrenci iken 2012’de 8453 olmuştur. Türkiye’de hekimlerin nicelik ve niteliğinin doğru planlanması için uygun adımların atılması elzemdir.

Amaç: Bu çalışmada önümüzdeki 20 yıl için Türkiye’de tıp fakültesi öğrencileri ve beklenen mezunlar açısından bir projeksiyon çalışması yapmayı ve iyi bir planlama için önerilerde bulunmayı amaçladık.

Yöntem: Hesaplamalarda her yıl açılan tıp fakültesi öğrenci kontenjanları, mezun sayıları, aile hekimliği eğitici ve asistan sayıları, asistan kadroları, aile hekimliği uygulamasına katılması beklenen mezun sayıları ve görevden ayrılması beklenen hekim sayıları dikkate alındı.

Bulgular ve Tartışma: 2019 yılında aile hekimliği uygulamasında 36793 hekim olmasını bekliyoruz. Böylece aile hekimi / nüfus oranı 3653’ten 2201’ye düşecektir. Diğer taraftan, hekim ihtiyacını belirlemede kişi başı yıllık vizite sayıları da önemlidir ve bu artış da dikkate alınmalıdır (2002’de 3,2 iken 2012’de 8,2 olmuştur).

Sonuç: Tıp fakültelerinin mezun sayılarındaki hızlı artış acilen gözden geçirilmeli ve Türkiye’de hekim ihtiyacını uygun sayıda devam ettirecek bir ayarlama yapılmalıdır. 2013 ve dolayısıyla 2019 yılları bu anlamda kritik olacaktır.

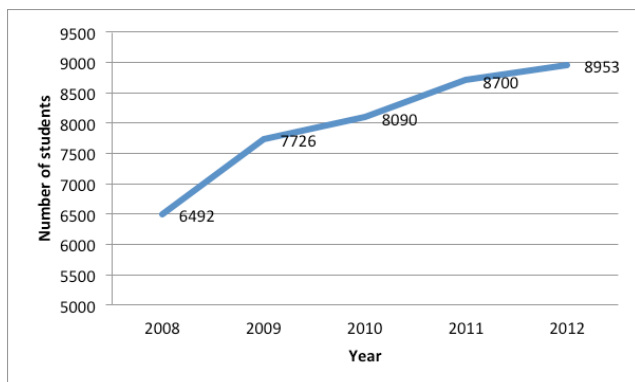
Anahtar Kelimeler: hekim ihtiyacı, iş yükü planlama, aile hekimliği, tıp eğitimi

Introduction

There is a wide variety among countries with regard to population densities of medical doctors. It may change from as low as less than 1 doctor per 100 thousand population (United Republic of Tanzania, Malawi, Niger) to more than 6 doctors per 1000 doctors (Cuba, Greece, Monaco). World average of physicians per 1000 citizens is around 1.6. European average on the other hand is 3.4 doctors per 1000 population (1).

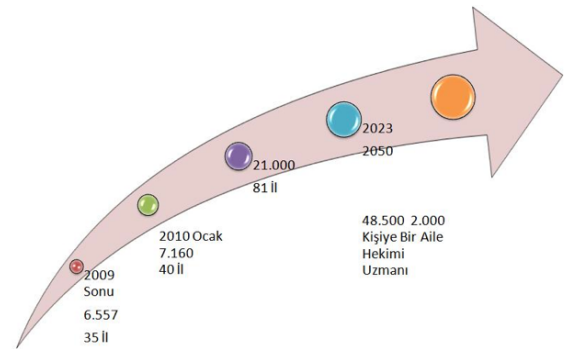
As to 2012, Turkey has a population of 75 627 384, which is expected to be 84 247 088 by the year 2023 and 94.6 million by the year 2050 (2). The total physician workforce of Turkey is reported as 126.029 for the year 2011 (3) making 1.7 physicians per 1000 population.

Since the physician workforce is far below European average, the Turkish Ministry of Health and Higher Educational Council have steadily increased the number of medical faculties as well as the number of students (Graph 1) (4). The main shortage of workforce is with primary care physicians. As to December 2012, the current number of Primary Care physicians (PC) in Turkey is 20503 (5). Current PC physician/population ratio in Turkey is around 3500. The Turkish Ministry of Health aims to have 48500 family physicians in practice by the year 2023 (Graph 2) (6).



Graph 1: Total number of class 1 medical students in Turkey from 2008 to 2012.

We aimed to make a projection plan for the next two decades, proposing student enrollment quotas in order to enable a smooth transition from low physician/population ratio to a ratio similar to the European level.



Graph 2: Family physician workforce projections of the Turkish Ministry of Health.

Methods

There are currently around 180 family medicine trainers in 62 programs. Currently around 800 family medicine trainees are receiving postgraduate education. Each year around 300 new seats are announced. Postgraduate training positions for family physicians as well as the number of trainers is suggested to increase substantially within the next years.

We foresee that 90% of family medicine graduates will be working in primary care. From the new medical graduates around 35% are expected to work in primary care. The remaining will enter any other specialty or do some non-medical work.

The ministry of health announced to stop hiring untrained medical graduates in primary care by the year 2017 (7). We anticipate that this date will be latest 2020.

We anticipate that each year 3% of doctors will leave the work due to job change, retirement, death or other reasons.

Results and Discussion

Given the current number of medical students enrolled, we expect to have 36793 doctors in the primary care by the year 2019. This will change the population / family physician ratio from 3653 to 2201 (Table 1). Hence, 2019 will be a critical date for decreasing the number of medical school graduates, which necessitates action to be taken from today.

With the putative values mentioned, a physician/population ratio of around 2500 for primary care can be achieved if the postgraduate training positions for family physicians can gradually

Table 1: Projections for number of graduates, family medicine residents, and PC doctor/population ratio for the next 20 years.

Year	# of FM programs	# of FM trainees	# of new training positions	Total FM trainees	New FM graduates	# of FP joining PC	Total FP in PC	New medical graduates	Graduates joining PC	Total untrained GP in PC	Physicians leaving PC	FP remaining in PC	FP/UGP (%)	Population	Population / PC doctor
2012	62	180	300	800	200	180	2,500	4902	1716	18000	615	20500	12.2	74,885,000	3,653
2013	80	300	500	900	200	180	2,605	4980	1743	19203	654	21808	11.9	75,811,000	3,476
2014	90	400	600	1,200	200	180	2,707	6492	2272	20899	708	23606	11.5	76,707,000	3,249
2015	100	600	700	1,600	300	270	2,896	7726	2704	22976	776	25872	11.2	77,601,000	2,999
2016	100	600	800	2,000	500	450	3,259	8090	2832	25118	851	28377	11.5	78,478,000	2,766
2017	100	600	900	2,300	600	540	3,701	8700	3045	27410	933	31111	11.9	79,337,000	2,550
2018	100	600	1000	2,600	700	630	4,220	8953	3134	29721	1018	33941	12.4	80,170,000	2,362
2019	100	600	1100	2,900	800	720	4,813	9000	3150	31980	1104	36793	13.1	80,983,000	2,201
2020	100	600	1200	3,200	900	810	5,479	5000	0	31020	1095	36499	15.0	81,778,000	2,241
2021	100	600	1200	3,500	1000	900	6,215	5000	0	30090	1089	36304	17.1	82,558,000	2,274
2022	100	600	1200	3,700	1100	990	7,018	5000	0	29187	1086	36205	19.4	83,328,000	2,302
2023	100	600	1200	3,800	1200	1,080	7,888	5000	0	28311	1086	36199	21.8	84,247,088	2,327
2024	100	600	1200	3,800	1200	1,080	8,731	5000	0	27462	1086	36193	24.1	84,400,000	2,332
2025	100	600	1200	3,800	1200	1,080	9,549	5000	0	26638	1086	36187	26.4	85,000,000	2,349
2026	100	600	1200	3,800	1200	1,080	10,343	5000	0	25839	1085	36181	28.6	85,000,000	2,349
2027	100	600	1200	3,800	1200	1,080	11,112	5000	0	25064	1085	36176	30.7	85,000,000	2,350
2028	100	600	1200	3,800	1200	1,080	11,859	5000	0	24312	1085	36171	32.8	86,000,000	2,378
2029	100	600	1200	3,800	1200	1,080	12,583	5000	0	23582	1085	36166	34.8	86,000,000	2,378
2030	100	600	1200	3,800	1200	1,080	13,286	5000	0	22875	1085	36161	36.7	86,000,000	2,378
2031	100	600	1200	3,800	1200	1,080	13,967	5000	0	22189	1085	36156	38.6	87,000,000	2,406
2032	100	600	1200	3,800	1200	1,080	14,628	5000	0	21523	1085	36151	40.5	87,000,000	2,407
2033	100	600	1200	3,800	1200	1,080	15,269	5000	0	20877	1084	36147	42.2	87,000,000	2,407

FM: Family Medicine, FP: Family physicians, PC: Primary Care, GP: General Practitioners

be increased up to 1200 seats each year. Even then the FP/UGP ratio for primary care can be increased only up to 42% (Table 1).

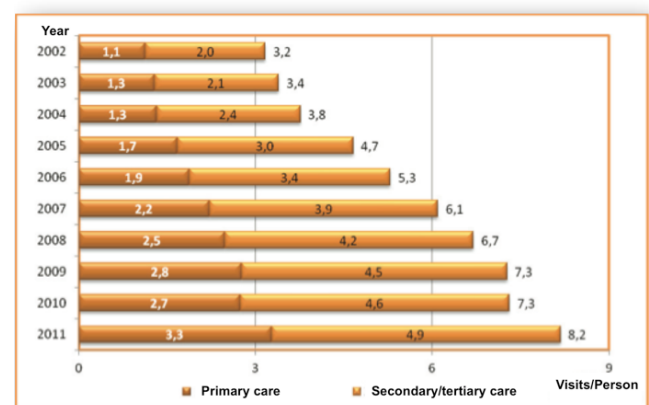
Although the physician/population ratio is an important parameter in the quality of healthcare services, in regard to the workload of a PC physician, per capita visits rates among registered population is another very important factor.

The number of per capita visits differs widely among countries depending on the ease of access to healthcare services. Generally, the use of health service increases as the ease of access and quality of healthcare service increases.

The highest number of per capita visits was 15.5 in 1996 in Czech Republic, decreased to 14.8 in the year of 2006, followed by Japan with the number of 14.4 in 2000. The number may decrease as low as 0.19 in Niger and 0.22 in Burkina Faso (8).

The average number of visits per capita in Turkey was 3.2 in 2002, which gradually increased to 8.2 in

2012 (Graph 3), possibly parallel to the increase of quality and accessibility of health care services (9).



Graph 3: Mean yearly visits to doctors per capita in Turkey between 2002 and 2011.

Conclusion

In order to provide health services comparable to the standards of developed countries it is very important to have enough physician workforces. However, the balance between quantity and quality

must always be kept in mind. If the number of seats and thus the number of medical graduates can't be properly planned ahead, Turkey may soon end up with more graduates than needed, leading to unemployed doctors; not mentioning the quality problem of the graduates.

According to our projections, the rapid increase in the number of medical graduates must urgently be revised and adjusted to a number enough to maintain continuous physician need. Around 5000 graduates

per year seems to be feasible for Turkey. If we want to achieve this target, quota of medical schools must be cut down starting from 2013 since the high number of students already enrolled will continue to graduate during the next six years.

Difficulty in this formula will be to increase the number of training centers and family medicine trainers to accommodate the high number of family medicine residents.

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Corresponding Author / İletişim için

Prof. Dr. Zekeriya Aktürk
Department of Family Medicine,
Atatürk University Faculty of Medicine, 25100,
Erzurum, Türkiye
E-posta: zekeriya.akturk@gmail.com