Health Services Management in Turkey: Failure or Success?

Abstract

Background: The unfair distribution and delivery of health-care resources have been recognized as a problem in the worldwide. In the past 18 years, Turkey has undergone rapid social, cultural, and economic changes. The lifestyle and dietary habits of its people have also been changing, and the rates of diabetes, obesity, cancer, and other chronic diseases have increased dramatically over the past two decades. The health transformation program (HTP) has improved the Turkish health-care system since 2003. The main goal of HTP was to progress government, to provide equality between citizens, to give satisfaction to users and providers, and to subsidise the health-care system in Turkey. **Aim:** The aim of this study is to assess health-care services and health care quality delivery in the Republic of Turkey with special emphasis on governmental hospitals, university hospitals, primary healthcare centers (PHC) and to make comparison with low-, medium- and high-income countries. **Methods:** This is a retrospective, descriptive study. The ministry of health Annual Reports, websites of the Central Intelligence Agency (CIA), The World Fact Book, organization for economic cooperation and development report, Compendium of Health Statistics, the Google engine, and PubMed were searched for information about Turkey's health-care system and its history. Papers and websites in English were evaluated. There was no restriction on types of articles and sources. **Results:** Turkey has made outstanding reforms in health status in the last two decades, especially after the implementation of the HTP. The doctor's perception has more influence regarding consultation length and visit than the patient's. The results of consultations in volunteer practices in Istanbul showed that the mean and SD of the consultation length for the whole sample of 360 patients was 7.95 ± 4.38, (with range = 3–25 min). Consultation time has been affected by the patients' diseases, genders that women got longer consultation time, medical practices at the urban or rural areas, and ages which older patients required longer consultation time. The current study revealed that increasing doctor's workload leads to decrease the length of consultations. Moreover, average life expectancy reached 75.3 for men and 80.7 for women in 2015. The infant mortality rate decreased to 10.7/1000 live births in 2015, down from 117.5 in 1980. The leading causes of death are diseases of the circulatory system followed by cancer. **Conclusions:** The Turkish health system and health-care delivery have been improved over the last decade. Still far from perfect, there is a particular planning to increase medical workforce in PHC including well-trained staffs for a specific area. An urgent need is to acquire more accurate and reliable data from hospital and PHC centers in Turkey. Additional some attempts should be made to assess quality of healthcare in relation to services and process.

Keywords: *Assessment, health care services, health performance, management, Ministry of Health, Turkey*

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Introduction

The unfair distribution and delivery of health-care resources have been recognized as a problem in the worldwide. Human resources such as doctors, dentists, pharmacists, nurses, midwifes, or other health workers are essential for appropriate health-care delivery. Health care is one of the significant determinants of human health along with socioeconomic, environmental, and behavioral factors.[1] The Turkish Ministry of Health (MOH) carry out the health transformation program (HTP) with the aim of development on governance and equality between citizens, giving satisfaction to users and providers, and supporting the health-care system financially in Turkey.[2]

Several studies[3-6] emphasized that although patients get satisfaction from the healthcare through hospitals or general practices, they complain about short consultations and using consultation time inefficiently. Moreover, general practitioners (GPs) and family physicians play an important role in primary health-care services and health promotion.[3-6] A number of studies highlighted that the length of consultations has influenced by characteristics of the

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physicians and patients and reasons of the consultations.[4-6] In general, the size of practice lists, apart from extremely large or extremely small, may not be significant indicators for measuring consultation time.[7] Furthermore, doctors allocate more time for patients who have new problems than those with already defined problems.[4,6,8] Usually, physicians × workload and performance are a matter of debate since consultations on psychosomatic and mental diseases take more time than other diseases.[9-11] In fact, short consultation is one of the patients × common concerns[3-6,11-13] although consultation length may be an indicator to assess the quality of consultation.[3]

The aim of this study is to assess health-care services and health-care quality delivery in the Republic of Turkey with special emphasis on governmental hospitals, university hospitals, primary health-care centers (PHCs), and to make comparison with low, medium, and high-income countries.

Methods

Turkey has been considered as an upper-middle income country with a population of 79.8 million people in 81 provinces at different levels of socioeconomic condition and as a bridge between Asia and Europe. Turkey's economy has rapid growth over the last decade although there are socioeconomic differences among people.

The information used for this study obtained from the MOH, Annual Health Reports.[14] This report contains information such as crucial health statistics, leading causes of death, health-care expenditures, hospital services, population per bed and number of medical staff, specialist, GPs, hospital, pharmacist, and nurses in Turkey. Additional data and sources were obtained from Compendium of Health Statistics in UK,[15] World health Organization,[16-18] World Bank Report (2004),[19] CIA fact book web page, organization for economic cooperation and development, PubMed, and Google engine.

We aimed to measure quality of healthcare and to explore consultation length at general practice consultations with the participation of 16 full-time GPs (10 males and 6 females) in Istanbul during the period February 2017 to July 2017. Of the 500 consultation patients, distributed 360 were agreed to take part in this study with a response rate of 72%. Content validity, face validity, and reliability

of the questionnaire were tested among 75 participants. The Cronbach's alpha value for the total questionnaire was 0.91, and test-retest value was 0.84 for the total scale. The average GP provision per population, the average number of visits per year by sex and age group has been calculated. The population served by a family physician and the proportion of medical force working in PHC for some selected countries during a period of year 2015 was revealed [Table 1].

The data were analyzed using the Statistical Package for the Social Sciences (IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp). Student-*t*-test was used to ascertain the significance of differences between mean values of two continuous variables. Chi-square and Fisher exact test (two-tailed) were used to test for differences in proportions of categorical variables between two or more groups. The level $P < 0.05$ was considered as the cutoff value for significance.

Results

Table 2 presents several selected health indicators and services in the Republic of Turkey. The implication is that the number of operation per 1,000 was 60.6 while population per hospital bed was 393.7 during the year 2015. As can be seen from this table, cerebrovascular and ischemic heart diseases were ranked number one killer (40.3%). The highest incidence rates for infectious diseases per 100,000 were chicken pox (3.6%).

Table 1 shows the population served by a family physician and the proportion of GP from the total medical staff working in primary health-care centers for some selected countries during a period of year 2015. The population per physician in Qatar (314) is very close to Australia (305) and UK (356). In addition, the population per GP in Qatar (949) is comparable to Australia (692). The computation of the population per GP (1,866) in Turkey is close to the USA (1,401) and UK (1,519) while 587 populations would be served by one physician. The population per GP ratio in the UK is 1,519 to 1; however, the target ratio to achieve better services is 1000 to 1.[15] It appears that even developed countries have undersupply of GPs.

The pilot survey regarding quality of care at volunteer practice consultations in Istanbul showed that the mean

Table 1: The population served by a family physician and the proportion of medical force working in Primary Healthcare Centers for some selected countries during a period of year 2015

Health service indicator	Turkey (26)	The USA (27)	Australia (28)	The United Kingdom (29)	Qatar (3)	Iran (35)
Population per physician	587	347	305	356	314	890
	2015	2014	2011	2013	2010	2015
Population per GP	1866	1401	692	1519	949	1293
	2015	2010	2015	2011	2014	2015
GP's as percentage of	32.0%	41.8%	43.0%	40.0%	33.2%	41.3%
medical workforce	2015	2010	2015	2014	2013	2015

GP=General practitioner

Table 2: Rates of health service performance in Turkey during a period of 2005-2015			
Variables	**2005**	**2010**	**2015**
Hospital services			
Number of PHC centers	-	-	21,696
Number of GP/family doctor	30,900	39,712	41,794
Population/PHC center	-	-	3626
Number of specialist doctor		66,064	77,622
Number of hospitals	1196	1439	1533
Number of bed	170,972	200,239	209,648
Bed per 1000 population	2.48	2.72	2.66
Rate of bed occupancy	65.5	63.8	69.6
Average days of stay	5.3	4.4	3.9
Average bed turnover rate	45.0	53.1	64.6
Operation per 1000	37.4	51.9	60.6
Day case surgery	29	46	53.1
Percentage of hospital deliveries	80	92	99
Workforce per 100,000			
Number of doctors	100,853	123,447	141,259
Dentist	18,149	21,432	24,834
Nurse	78,182	114,772	152,803
Population/doctors	146	167	179
Population/dentist	26.4	29	32
Population/pharmacist	33.1	36	35
Population/nurse and midwife	177	224	261
Incidence infectious diseases rates/100,000			
Measles	1.6	0.1	0.4
AIDS	0.05	0.09	0.15
Meningococcal infection	0.04	0.00	0.00
Malaria	3.0	0.1	0.3
Hepatitis A	12.02	4.2	2.88
Hepatitis B	12.81	3.78	0.90
Pulmonary TB	34	25	18
Chicken pox	-	16.3	3.6
Mumps	27.41	1.05	0.20
Rubella	1.55	0.15	0.43
Haemophilia influenzae	0.00	0.00	0.00
Tetanus	0.03	0.03	0.01
Diphtheria	0.00	0.00	0.00
Leading causes of deaths (%)			
Cerebrovascular, ischemic heart diseases	47.0	39.6	40.3
Cancer	22	21.3	20.0
Respiratory system diseases	8.0	8.3	11.1
Endocrine , nutrition, and metabolic	2.2	6.4	5.0
Neurological and sense disorders	3.3	3.7	4.9
Road traffic accidents and poisoning	9.3	4.4	4.5
Infection	10.8	9.3	7.2
Mental illnesses	5.2	6.0	7.4

PHC=Primary healthcare centers, GP=General practitioner, TB=Tuberculosis

and SD of consultation length for the whole sample of 360 patients was 7.95 ± 4.38 min (with range = 3–25 min). The range of individual doctors' mean consultation lengths was 6.74–9.58 min. Table 3 presents consultation length for patients with general practitioner in European and Arabian Gulf Countries. Furthermore, Table 4 gives a number of selected health services indicators for low, middle, and high-income countries. The success and failure in the development of health technology program and assessment in Turkey were analyzed in Table 5.

Discussion

Turkey achieved a great success in the health-care delivery and equity, economic fairness with decreased health costs,

Table 3: Consultation length for patients with general practitioner in several selected countries

Selected countries	References	Sample size	Minutes seen by doctor (mean±SD)
Germany	Deveugelee *et al.*, 2002[5]	889	7.6±4.3
Spain	Deveugelee *et al.*, 2002[5]	539	7.8±4.0
The United Kingdom	Elmore *et al.*, 2016[8]	440	10.2±4.4
The Netherlands	Deveugelee *et al.*, 2002[5]	579	10.2±4.9
Belgium	Deveugelee *et al.*, 2002[5]	601	15.0±7.2
Switzerland	Deveugelee *et al.*, 2002[5]	620	15.6±8.7
The USA	Levinson and Chaumenton, 1999[21]	106	13
Croatia	Ozvacić Adzić, 2008[10]	5527	11.5±5.5
Turkey	Kringos *et al.*, 2011[29]	1548	11
Japan	Kabeya *et al.*, 2017[31]	1197	10.1
Solvenia	Petek Ster *et al.*, 2008[32]	12,501	6.9
Australia	Britt *et al.*, 2006[6]	70,758	12.0
Saudi Arabia	Bener *et al.*, 2007[40]	843	5.7±2.3
The United Arab Emirates	Annual Health Report UAE, 2015[33]	872	5.6±2.8
State of Qatar	Bener *et al.*, 2010[7,40]	598	6.6±2.1
Portugal	Cavaco *et al.*, 2011[34]	516	22.2±9.4
Iran	Khori *et al.*, 2012[35]	620	6.9±2.6
Pakistan	Jawaid *et al.*, 2009[36]	490	6.0±3.34
Norway	Ydstebø *et al.*, 2015[37]	1001	5.6±5.4

SD=Standard deviation

Table 4: Some selected health services indicators for various low-, middle-, and high-income countries[39,41]

Country	Year	Population/physician	Physician 1000 population	Year	Population/bed	Bed 1000 population
Croatia	2011	352.11	2.84	2014	169.49	5.9
The UK	2013	355.87	2.81	2011	344.83	2.9
The USA	2011	408.16	2.45	2011	344.83	2.9
Sweden	2011	254.45	3.93	2011	370.37	2.7
France	2013	313.48	3.19	2011	153.25	6.4
Germany	2012	257.07	3.89	2011	121.95	8.2
Oman	2012	411.52	2.43	2012	588.23	1.7
Saudi Arabia	2012	401.60	2.49	2012	476.19	2.1
The UAE	2010	395.25	2.53	2012	909.09	1.1
Iran	2014	900	1.49	2012	2000	0.5
Tunisia	2010	819.67	1.22	2012	476.19	2.1
Iraq	2010	1639.34	0.61	2012	769.23	1.3
Jordan	2010	390.62	2.56	2012	555.55	1.8
Pakistan	2010	1204.82	0.83	2012	1666.66	0.6
India	2012	1428.57	0.70	2011	1428.57	0.7
Singapore	2013	512.8	1.95	2011	500	2.0
Australia	2011	305.81	3.27	2010	256.41	3.9
China	2011	671.14	1.49	2011	263.15	3.8
Switzerland	2012	246.91	4.05	2011	200	5
Turkey	2015	587	1.70	2015	393.7	2.5

and population satisfaction with the health system during the period 2003–2015. According to the World Bank Report, the number of nurses should be at least two times more than the number of physicians. Nurses per physician ratio in Turkey were similar to few developed countries such as the USA, the UK, and Germany.[19] The shortage of human resources in health system is ignored yet and leads to an important health issue in some of the world's poorest countries.[20-24] This is confirmative with the present study.

Turkey has achieved significant progress in health system by means of the Health Transformation Program. The HTP has improved financially the Turkish health care system since 2003. The most part of population is financed by a social security scheme regarding health-care services. Public and private health services accept the general health insurance scheme. Thus, private health services make progress through the agreement with MOH.[25] Moreover, the health indicators are not comparable with the developed

Table 5: Analysis of success and failure in the development of a health technology program and assessment in Turkey

Success	Failure
Individuals skilled and trained in Health Transformation Program subject and area	Inadequate multidisciplinary approach
Involvement of mass media in healthcare reforms	Classical expert-based decision-making perception
Key improvements in health care system: Investments for databank	Poor priority-setting process and poor information technology network
Applications of evidence-based decision-making	Poor quality and availability of data
Healthcare improvements: Reshaping of general health insurance	Lack of interest by universities and medical schools and barriers between MOH and academic institutions
Establishment cornerstones of family Medicine physicians based on primary healthcare system	Lack of general awareness of Health Technology Assessment information
Mandatory health insurance fund based on payroll tax run by Social Security Institution	The number of medical schools and students rate increased substantially without any concern about quality
The frequency of health-care services usage and the time given to each patient is increased	Lack of trained academic and clinical human resources
Involvement of politicians and private sector in healthcare	Lack of appropriate funding by government or industry
Patients' satisfaction increased with the reform due to more access to health care and drugs	External interference and lack of inspection
International contact: European Union and World Bank operation	The number of emergency admissions exceeds the total population
The priority given to patients as a right to choose appropriate doctor can be considered a good approach	Health Transformation Program which over 10% not covered by insurance scheme and 5 million individual do not have access to the health services
Equality between individuals who use social insurance and green card (type of insurance for the poor)	Insurance payments covered only a particular and smaller amount of package of health services by recent reform
Increased number and performance of state hospitals	MOH claim success and improvement based on unreliable data which we do not know the level of health-care services delivered
The proportion of public expenditure is increased in total health expenditure	The lack of doctors' professional performance and behavior are influenced by the way they are paid
Decreased mother\child death and increased life expectancy in the Western side of Turkey	The private hospitals favored by the government against government hospitals
	Medical schools and their hospitals are deteriorating day-by-day from the quality and financial point view

MOH=Ministry of Health

or Western countries although life expectancy at birth has risen infant, child, and maternal mortality rates have decreased. Developments in the access of health-care systems are related to country's socioeconomic status and lead to improve health status.

Unfortunately, referral system is not obligator; however, first patients need to contact with the primary levels of care, then they are referred to secondary and tertiary care. The main reason is the limited number of GPs or family practitioners. In the long term, a referral system is an essential part of the sustainability of the health-care system. Furthermore, the area to be targeted for reform should be hospitals, waiting challenges, patient safety, advisory services, and international accreditation and certification.

There are several shortcomings to improve the quality of healthcare, especially mental healthcare, better access to modern technology, and care of elderly population.[14,26] They still require special attention. Moreover, the role of the private sector in the provision of health-care services increases and sometimes is not controlled properly. Therefore, powerful regulation and inspection are necessary for private health sector.

Furthermore, a considerable amount of literature has been published on the health promotion affected by the proportions of the consultation.[3] Several studies established that consultations that last <10 min do not play an important role on health promotion.[3,5-6] Average consultation time was 5.7 min in Saudi Arabia.[3] Longer consultations are linked to better quality care for patients with chronic diseases. The consultation length was 11 min per patient in Turkey [Table 3] and 6.6 min per patient in Qatar, highest per-capita worldwide.[3] The average consultation time was 13 min in the United States,[22] 12 min in Australia,[6,27] and 10.2 min in the UK.[8,28] This is consistent with the consultation length in Turkey[29,30] and current prospective study revealed the mean and SD of consultation length was 7.95 ± 4.38 min. The consultation length was calculated as 10.1 min in Japan,[31] 6.9 min in Solvenia,[32] 5.6 ± 2.8 min in the UAE[33] and 22.2 ± 9.4 min in Portugal.[34] The variations in average consultation length, patient turnover, continuity of care, and range of health-care services are correlated with the size of practice list and the number of patients per doctor.[13] This complies with the present study outcome.

Majority of the developed countries gather various types of data related to health services. Indicators are significant to measure and describe health status and to determine health system performance and satisfaction of users and providers since health cannot measure directly but using indicators. Each indicator represents an aspect of health and they reflect the comparisons between areas, regions, and nations. Furthermore, several methodological challenges are necessary to understand and enhance indicators, especially composite indicators that are the combination of several important performance indicators. Methodological challenges show up while composite indicators are measured. These challenges are indicators selection, data quality, determination of weights for each indicator, dealing with collinearity among the indicators, and detection of external factors affecting performance.

In general, health-care service and health-care delivery in primary healthcare reflect the parameters: The population served by a family physician (GP), and the proportion, education, and seniority of the medical workforce in PHC. In primary health-care centers, although most of the physicians are qualified as specialists, they are serving the population as a GP [Table 1]. A GP/population ratio, which is a population tool for assessing the quality of health care, is not by itself an accurate indication of the health status of a country's population, although it may roughly reflect the level of development.

The proportion of the medical workforce working in PHC is very low in the Republic of Turkey. Over 75% of the doctors, almost all in nontraining grades, work in tertiary care systems because postgraduate training programmes are not properly arranged.

GPs as percentage of medical workforce in the primary health-care services were very low in Iran (24.1%)[35] as compared to wealthier countries like Australia (43%)[27] and the UK (40%).[21,28]

It was revealed that if the doctor has longer time for consultations, it leads to continuity of patient care.[7,13,36-38] A specialized workforce is necessary to use the advantages of research and technology.[23] While a generalist workforce reaches the number needed, the concentration of specialist workforce is insufficient.

It has been suggested that many factors including the preventably and effectiveness of health problem, benefit, harm, and cost of any intervention have very strong impacts on health care decision-making.[39-41] Usually, policymakers are need to "essential policy-relevant evidence" to affect policy-making and it was recommended that researchers should help them more with the task of piecing together the "jigsaw of evidence."

Conclusions

The Turkish health system and health-care delivery have been improved over the last decade. Still far from perfect, there is a particular planning to increase medical workforce in PHC including well-trained staffs for a specific area. An urgent need is to acquire more accurate and reliable data from hospital and PHC centers in Turkey. Additional some attempts should be made to assess the quality of healthcare in relation to services and process.

Conflicts of interest

There are no conflicts of interest.

References

1. Dussault G, Dubois CA. Human resources for health policies: A critical component in health policies. Hum Resour Health 2003;1:1.
2. Ministry of Health of the Republic of Turkey. Evaluation Report (2003–2010). Turkey: Turkey Health Transformation Program; 2011. Available from: http://www.saglik.gov.tr/EN/dosya/2-1186/h/htp2011jan.pdf. [Last accessed on 2017 Jul 16].
3. Cape J. Consultation length, patient-estimated consultation length, and satisfaction with the consultation. Br J Gen Pract 2002;52:1004-6.
4. Carr-Hill R, Jenkins-Clarke S, Dixon P, Pringle M. Do minutes count? Consultation lengths in general practice. J Health Serv Res Policy 1998;3:207-13.
5. Deveugele M, Derese A, van den Brink-Muinen A, Bensing J, De Maeseneer J. Consultation length in general practice: Cross sectional study in six European countries. BMJ 2002;325:472.
6. Britt HC, Valenti L, Miller GC. Determinants of consultation length in Australian general practice. Med J Aust 2005;183:68-71.
7. Bener A, Al Mazroei A. Health services management in Qatar. Croat Med J 2010;51:85-8.
8. Elmore N, Burt J, Abel G, Maratos FA, Montague J, Campbell J, *et al.* Investigating the relationship between consultation length and patient experience: A cross-sectional study in primary care. Br J Gen Pract 2016;66:e896-e903.
9. Cram P, Ettinger WH Jr. Generalists or specialists – Who does it better? Physician Exec 1998;24:40-5.
10. Ozvacić Adzić Z, Katić M, Kern J, Lazić D, Cerovecki Nekić V, Soldo D, *et al.* Patient, physician, and practice characteristics related to patient enablement in general practice in Croatia: Cross-sectional survey study. Croat Med J 2008;49:813-23.
11. Wilson A, Childs S. The relationship between consultation length, process and outcomes in general practice: A systematic review. Br J Gen Pract 2002;52:1012-20.
12. Campbell JL, Ramsay J, Green J. Practice size: Impact on consultation length, workload, and patient assessment of care. Br J Gen Pract 2001;51:644-50.
13. Bener A, Almarri S, Ali BS, Aljaber K. Do minutes count for health care? Consultation length in a tertiary care teaching

hospital and in general practice. Middle East J Fam Med 2007;5:3-8.

14. Yuen P, Armitage M, Compendium of Health Statistics (OHE) Compendium 16th ed. 2004-2005, Radcliffe Publishing Ltd., London, UK, 2004.

15. Atun R, Aydın S, Chakraborty S, Sümer S, Aran M, Gürol I, *et al.* Universal health coverage in Turkey: Enhancement of equity. Lancet 2013;382:65-99.

16. World Health Organization. Statistical Report; 2004. Available from: http://www.who.int/globalatlas/default.asp. [Last accessed on 2017 Apr 22].

17. World Health Organization, WHO Estimates of Health Personnel: Physicians, Nurses, Midwives, Dentists, Pharmacists," Geneva, 2004. www.who.int/globalatlas/autologin/hrh_login.asp. [Last accessed on 2018 Mar 20].

18. World Bank. Report for the Year; 2004. Available from: http://www.devdata.worldbank.org/external/dgsector. asp?W=0&RMDK=110&SMDK=473886. [Last accessed on 2017 Jul 17].

19. Chen L, Evans T, Anand S, Boufford JI, Brown H, Chowdhury M, *et al.* Human resources for health: Overcoming the crisis. Lancet 2004;364:1984-90.

20. Hongoro C, McPake B. How to bridge the gap in human resources for health. Lancet 2004;364:1451-6.

21. Levinson W, Chaumeton N. Communication between surgeons and patients in routine office visits. Surgery 1999;125:127-34.

22. Sheldon GF. The health work force, generalism, and the social contract. Ann Surg 1995;222:215-28.

23. World Health Organization. World Health Statistics 2010. Geneva: WHO; 2010. Available from: http://www.who. int/whosis/whostat/2010/en/index.html. [Last accessed on 2017 Apr 16].

24. Tatar M, Mollahaliloğlu S, Sahin B, Aydin S, Maresso A, Hernández-Quevedo C, *et al.* Turkey. Health system review. Health Syst Transit 2011;13:1-186, xiii-xiv.

25. AHRQ Health Information Technology Division's 2017 Annual Report. Content last reviewed May 2018. Agency for Healthcare Research and Quality, Rockville, MD. Available from: http://www.ahrq.gov/news/hit.html. [Last accessed on 2018 May 18].

26. United States, Primary Care Workforce Facts and Stats, 2014. Agency for Healthcare Research and Quality, Rockville, MD. Available from: https://www.ahrq.gov/research/findings/factsheets/primary/pcwork1/index.html. [Last accessed on 2018 May 18].

27. Australian Institute of Health and Welfare; 2015. Available from: http://www.aihw.gov.au/workforce/medical/how- many-medical-practitioners. [Last accessed on 2018 May 18].

28. General Medical Council, United Kingdom. Available from: http://www.gmc-uk.org/Chapter_1_SOMEP_2015.94.16. [Last accessed on 2017 Apr 16].

29. Kringos DS, Boerma WG, Spaan E, Pellny M. A snapshot of the organization and provision of primary care in Turkey. BMC Health Serv Res 2011;11:90.

30. World Health Statistics 2015. Geneva: World Health Organization; 2014. Available from: http://www.apps.who.int/iris/bitstream/10665/112738/1/9789240692671_eng.pdf?ua=1. [Last accessed on 2015 Sep 12].

31. Kabeya Y, Uchida J, Toyoda M, Katsuki T, Oikawa Y, Kato K, *et al.* Factors affecting consultation length in a Japanese diabetes practice. Diabetes Res Clin Pract 2017;126:54-9.

32. Petek Ster M, Svab I, Zivcec Kalan G. Factors related to consultation time: Experience in Slovenia. Scand J Prim Health Care 2008;26:29-34.

33. Ministry of Health United Arab Emirates. Annual Report 2015. Abu Dhabi: Ministry of Health UAE; 2015.

34. Cavaco AM, Pelicano-Romano J, Neves MR, Carvalho F. General practitioner residency consultations: Video feedback analysis. Int J Med Educ 2011;2:152.

35. Khori V, Changizi S, Biuckians E, Keshtkar A, Alizadeh AM, Mohaghgheghi AM, *et al.* Relationship between consultation length and rational prescribing of drugs in Gorgan City, Islamic Republic of Iran. East Mediterr Health J 2012;18:480-6.

36. Jawaid M, Ahmed N, Alam SN, Rizvi BH, Razzak HA. Patients experiences and satisfaction from surgical out patient department of a tertiary care teaching hospital. Pak J Med Sci 2009;25:439-42.

37. Ydstebø AE, Bergh S, Selbæk G, Benth JŠ, Lurås H, Vossius C. The impact of dementia on the use of general practitioners among the elderly in Norway. Scand J Prim Health Care 2015;33:199-205.

38. Howie JG, Heaney DJ, Maxwell M, Walker JJ, Freeman GK, Rai H. Quality of general practice consultations: Cross-sectional survey. Br Med J 1999;319:738-43.

39. CIA. World Health Organization, WHO Estimates of Health Personnel: Physicians, Nurses, Midwives, Dentists, Pharmacists," Geneva, 2004. Available from: www.who.int/globalatlas/autologin/hrh_login.asp]. [Last accessed on 2018 Mar 20].

40. Torun P, Heller RF, Harrison A, Verma A. Can health indicators help policy-makers? Experience from European system of urban health indicators (EURO-URHIS). The European J Public Health 2015;27(Suppl 2):14-8.

41. Bener A, Almarri S, Ali BS, Aljaber K. Do minutes count for health care? consultation length in a tertiary care teaching hospital and in general practice. Middle East J Family Med 2007;5:3-8.