









RESEARCH ARTICLE

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Daily Workload and Service Profile of Family Physicians in Turkey: A Snapshot of One-Day Work

ABSTRACT

Objective: The study aims to determine the daily workload and to analyze the content of workload, to describe the service profile of FPs working in primary care in Turkey.

Methods: The study design is descriptive and cross-sectional. A total of 28 FPs from 17 different cities were enrolled into the study. Two surveys, one inquiring the demographic properties of FPs participated and a second encounter form with 43 items inquiring all aspects of FPs' workload were filled by the participants.

Results: A total of 1,215 visits were reported. The average daily workload of FPs participating was 45.7 ± 16.8 visits. 92.5% of all patients were family physicians' own registered patients while 7.5% of them were guests. A total of 1,610 RFEs were reported. We categorized them as prescription requests (451, 28%), clinical complaints (447, 27.8%), preventive medicine services (436, 27%), administrative reasons (161, %10) and other reasons (115, 7.2%). Essential hypertension and diseases of musculoskeletal system were the most common diagnoses in prescription requests. Sore throat and cough were the top two clinical complaints.

Conclusions: FPs are under severe pressure in terms of workload in Turkey. Prescription requests account for an important percentage of this workload. Measures should be taken to lessen this burden.

Keywords: Primary Health Care, Family Physician, Workload

Türkiye'de Aile Hekimlerinin İş Yükü Ve Hizmet Analizi: Bir Günlük Fotoğraf

ÖZET

Amaç: Bu çalışma, Türkiye'de birinci basamakta çalışan aile hekimlerinin günlük iş yükünü belirlemeyi, iş yükünün içeriğini analiz etmeyi ve hizmet profilini tanımlamayı amaçlamaktadır.

Gereç ve Yöntem: Çalışma tasarımı tanımlayıcı ve kesitseldir. Çalışmaya 17 farklı şehirden toplam 28 aile hekimi dahil edilmiştir. Biri aile hekimlerinin demografik özelliklerini, diğeri ise iş yüklerini 43 maddede tüm yönleri ile sorgulayan iki anket katılımcılar tarafından doldurulmuştur.

Bulgular: İlgili gün içerisinde toplam 1215 muayene kaydı bildirildi. Katılan aile hekimlerinin günlük ortalama iş yükü $45,7 \pm 16,8$ muayenedir. Tüm hastaların% 92,5'i aile hekimlerinin kendi kayıtlı hastalarıyken % 7,5'i misafirdir. Toplam 1610 başvuru sebebi rapor edilmiştir. Bunlar reçete talepleri (451, % 28), klinik şikayetler (447, % 27.8), koruyucu hekimlik hizmetleri (436, % 27), idari nedenler (161, % 10) ve diğer nedenler (115, % 7.2) olarak sınıflandırılmıştır. Esansiyel hipertansiyon ve kas-iskelet sistemi hastalıkları reçete taleplerinde en sık görülen tanılardır. Boğaz ağrısı ve öksürük en sık görülen iki klinik şikayettir.

Sonuç: Türkiye'deki aile hekimleri iş yükü açısından ciddi baskı altındadır. Reçete talepleri bu iş yükünün önemli bir yüzdesini oluşturmaktadır. Bu yükü azaltmak için önlemler alınmalıdır.

Anahtar Kelimeler: Birinci Basamak Sağlık Hizmeti, Aile Hekimi, İş Yükü

INTRODUCTION

Turkey with a population of 76,667,864 (2013) implemented General Health Insurance System after the year 2012 providing health insurance coverage for each citizen (1). As of the end of 2010, transition in primary care has been completed and it's now assumed that every citizen has a "family doctor" in Turkey. The primary care has been organized as family health centers and community health centers. A family physician (FP) with a midwife or a nurse constitutes a family medicine unit and these doctors and nurses sign a two-year contract with the government which is automatically renewed. There are 21,175 family doctors of whom only 1,048 (4.9 %) have post graduate training, so called specialists in family medicine, working in 6,756 family health centers in coordination with 971 community health centers. A family doctor has an average of 3,621 persons in his/her list, more than almost all of the European countries (1-3). The costs of primary care in Turkey are met from national treasury (1). Patients only pay a small amount of contribution fee for prescriptions.

A FP in Turkey mainly gives medical service as an outpatient setting accepting daily patient visits. Some of them also have a duty called "mobile service" to a certain population depending on their location. This population is generally a congested area with a considerable distance from family health center. FPs are asked to visit the "health houses" in these areas one half-day of a week or more depending on the number of persons on mobile health service. Extra money is paid per capita to FPs who deliver this service. Another service expected from FPs is home visits to bedridden patients. These visits are pre-planned and reported to community health centers. Rarely, some FPs has a duty called "onsite health service" which is basically a visit to places like large schools, penitentiaries and dormitories in FP's area of service. Although FPs generally give service to their registered people, they were also expected to attend to the visitors in their pre-determined region. There is no extra pay for these visits. The nurse or the midwife usually carries on preventive health care services such as vaccination and follow-ups of babies and pregnant women under supervision of FP. A negative performance system is applied for these services meaning a failure to reach pre-determined targets are punished with substantial reductions in monthly salary for both FP and the nurse/midwife.

The high number of registered persons for each FP is expected to lead to an increased workload. Although Turkish FPs have no gate-keeping function and all people have unlimited access to any level of healthcare, daily number of encounters is high for the majority of family doctors (2,4).

It was reported officially that 212,318,024 visits were made to FPs in Turkey with a population of 76,667,864 in the year 2013. It was calculated that an average of 40.59 visits were made to a FP per day. While number of per capita visits to a physician at primary health care facilities was 1.1 in the year 2002, it increased to 2.9 in 2013 (4). However; there was a small increase in number of general practitioners since 2002: 29,030 vs. 32,601 in 2013.

While there are a few research papers on workload and service content of primary care before the drastic change in primary health care system, our literature search yielded very few articles investigating this subject after the implementation of this new system (4-6). Kringos et al. reported an average of 3700 registered people per FP and an average daily visit number of 47 from only two provinces in 2007. They emphasized on lack of coordination with other care levels and high patient satisfaction rate giving almost no details about service content or daily activities of Turkish FPs (4).

The aim of the study is to give an insight on the daily workload and service profile of FPs working in primary care in Turkey.

MATERIAL AND METHODS

The study design is descriptive and cross-sectional. An invitation was sent to all FPs in a digital discussion group consisting of more than 3.000 FPs working in primary care in Turkey. A total of 39 FPs from different provinces of Turkey volunteered to participate in the study. An instructions sheet with detailed descriptions how to fill two forms, a survey inquiring the demographic properties of FPs participated along with characteristics of their practice such as the number of people assigned to them and an encounter form with 43 items inquiring all aspects of FPs' workload. The date of 16th July which was Monday was chosen arbitrarily. The participants were asked to use "International Classification of Diseases" (ICD 10) codes and "The Anatomical Therapeutic Chemical Classification System" (ATC) when entering data which are mandatory to use in information systems in Turkish primary care (7,8). A total of 29 FPs responded and returned with survey forms. One report was excluded because lack of adherence to instructions. As a result 28 FPs from 17 different cities were enrolled into the study. All FPs were instructed to record data regarding their daily workload such as number of visits, reasons for encounter (RFE), type of contact (office or mobile site), demographic data of patients, clinical complaints, prescription data, laboratory or radiology test orders. The gathered information was used to form a database and all descriptive statistical analyses were performed using SPSS v.18.0 (IBM Corp., Armonk, NY, USA). RFEs were classified into five distinct

categories as clinical complaints, prescription requests, preventive medicine, administrative reasons and other reasons. We compared prescription rates among different age groups. Descriptive statistics was used to present the data. The ratio and interval data was presented as mean and standard deviation (SD). Student t test was used for the comparisons. A p-value less than 0.05 (≤ 0.05) is considered statistically significant. Ethics committee approval was received from Rize University Faculty of Medicine Research Ethics Committee.

RESULTS

The mean age of participating FPs was 36.6 ± 6.1 years and fifty percent of them (n=14) were female. Two FPs worked in rural areas whereas remaining 26 FPs worked in the city

centers. All but one were family medicine specialists. Fifteen FPs (53.5%) attended to 30-60 patients on the study day. Thirteen FPs (46.4%) were working in a medium practice group (3-5 FPs) and sixteen had a professional medical career for 10-19 years. Figure 1 depicts the locations and the number of the participants on the map of Turkey. A summary of the characteristics of FPs is presented in Table 1.

Type of Contact: A total of 1,215 visits with 1610 RFEs were reported by the participating FPs. Almost all contacts took place in the FP's health care center. One FP reported 25 contacts when he was on "on-site service" duty at a nearby penitentiary where he mainly corresponded residents' health complaints.



Figure 1. The location and number of FPs enrolled in the study

Table 1. Characteristics of family physicians (n=28)

Characteristic	n (%)
(1) Practice area by province	
Western	13 (46.5)
Northern	8 (28.5)
Central	5 (18)
South-eastern	2 (7)
(2) Sex	
Female	14 (50)
Male	14 (50)
(3) Age	
30-39 years	17 (60)
40-49 years	10 (36)
50 years or more	1 (4)
(4) Number of years in medical profession	
0-9	6 (21.5)
0-19	16 (57)
≥ 20	6 (21.5)
(5) Size of practice group (number of FPs working together)	
Small practice group ≤ 2	1 (4)
Medium practice group 3-5	13 (46)
Large practice group ≥ 6	14 (50)
(6) Specialization	
Yes	27 (96)
No	1 (4)
(7) Numbers of patients seen on study day	
< 30	6 (21)
30-60	15 (54)
> 60	7 (25)

Eight FPs reported that they had a “mobile service population” which they visited once a week for a half-day but none of them reported it was on Monday. No home visits or telephone contacts were reported. Although some FPs in Turkey works with a telephone appointment system, no FPs in our study were using such an appointment system.

The average daily workload of FPs participating in our survey was 45.7 ± 16.8 visits (minimum 18 and maximum 81 visits). Mean age of the patients was 39.9 ± 25.3 years (minimum 0 and maximum 100 years), and 59.8% (n=727) of

them were female. Of the patients, 92.5% (n=1124) were family physicians’ own registered patients while 7.5% (n=91) of them were guests, and 9.3% (n=113) did not come themselves but sent someone else such as a relative for a prescription renewal.

Health Problems: A total of 1,610 RFEs were reported. We divided RFEs into five main groups: 1. Clinical complaints, 2. Prescription requests, 3. Preventive medicine, 4. Administrative reasons, 5. Other reasons. Table 2 shows the distribution of all RFEs in these five different groups.

Table 2. Distribution of RFEs (n=1610)

RFE Category	n	%
1. Clinical complaints	447	27.8
2. Prescription requests	451	28.0
3. Preventive medicine services	436	27.0
4. Administrative reasons	161	10.0
5. Other	115	7.2

The most common intervention reported was prescribing medications, with a total of 853 prescriptions in 70.2% of all contacts. Family physicians conducted diagnostic laboratory tests in 6.9% of all contacts (84 patients). Sixteen patients (1.3%) had X-Ray imaging. These tests were carried out in regional laboratories and imaging centers located elsewhere. Forty-three patients (3.5% of all contacts) were referred to secondary/tertiary care after clinical evaluation. There was no referral within primary care.

Clinical Complaints: The questionnaire specifically inquired physical examination by asking “Did you touch the patient?” and “Did you evaluate the patient’s complaints?” An affirmative answer was given with 445 patients (272 female,

173 male) with 447 complaints falling into this category. Twenty of these RFEs (4.5%) were subsequent visits, namely “controls”. Prescriptions including 532 drugs were issued for 402 patients in this category (90%). We found that significantly higher number of drugs was prescribed in patients 65 or higher years of age compared with patients under the age 65. ($p < 0,0001$) We also compared patients 45 or higher years of age with younger patients less than 45 years of age and we again found that significantly higher number of drugs was prescribed in patients 45 or higher years of age. ($p < 0,0001$) Top 10 clinical reasons for encounter by ICD-10 chapters and their corresponding ICPC-2 codes are listed in Table 3.

Table 3. Clinical complaints of patients (n=441)

RFE	n (%)	ICD-10 code	ICPC-2 code
Sore throat	98 (22%)	J 02	R21
Cough	49 (11%)	R 05	R05
Pruritus	37 (8.3%)	L 29.9	S02
Dyspepsia	36 (8%)	K 30	D07
Fever, unspecified	34 (7.6%)	R 50.9	A03
Rash and other nonspecific eruption	27 (6%)	R 21	S06-S07
Low back pain	28 (6.2%)	M 54.5	L03
Pain in a joint	27 (6%)	M 25.5	L20
Myalgia	23 (5.1%)	M 79.1	L18
Rhinorrhea	17 (3.8%)	J 34.8	R07
Malaise and fatigue	16 (3.5%)	R 53	R53
Headache	16 (3.5%)	R 51	N01
Constipation	11 (2.5%)	K 59.0	D12
Sneezing	10 (2.2%)	R 06.7	R07
Diarrhea, gastroenteritis and colitis of nonspecific origin	8 (1.8%)	A 09.9	D11-D70-D73-D93
Dizziness	4 (0.9%)	R 42	N17

Prescription Requests: A total of 451 prescription requests (28% of all RFEs) were reported. These requests consisted of 754 different drugs. One hundred twenty four of these requests (27.5%) were for chronic diseases documented in

secondary or tertiary health care facilities by an exemption report for reimbursement. The most frequent 20 diagnoses written for these prescriptions were listed in Table 4.

Table 4. The top10 diagnoses in prescriptions requested from 451 patients. (n=754)

DIAGNOSIS	n	%	ICD-10 Code
Essential (primary) hypertension	175	22.9	I10
Diseases of musculoskeletal system and connective tissue	89	11.8	M0-99
Dyspepsia	81	10.6	K30
Non-Insulin-Dependent Diabetes Mellitus	68	8.9	E11
Mood(affective) Disorders, Neurotic, stress-related and somatoform Disorders	59	7.7	F30-F48
Diseases of the skin and subcutaneous tissue	48	6.2	L00-99
Hyperlipidemia	42	5.4	E78.5
Chronic ischaemic heart diseases	28	3.6	I25
Hypothyroidism, unspecified	18	2.3	E03.9
Hyperplasia of prostate	17	2.2	N40
Others	129	17.1	

When the drugs requested for prescription were classified according to Anatomical Therapeutic Chemical (ATC) Classification System, the most frequent five drugs prescribed were as follows: Acetylsalicylic acid, anti-

inflammatory and antirheumatic products -Non-steroids, beta blocking agents, proton pump inhibitors, angiotensin 2 antagonists combined with diuretics. The list of top 10 drugs prescribed with patients' requests is presented in Table 5.

Table 5. The list of top 10 drugs prescribed by FPs with patients' requests (n=754)

Drug	n	%	ATC*Code
Acetylsalicylic acid	98	13.0	N02BA01
Anti-inflammatory and antirheumatic products,non-steroids	83	11.0	M01A
Beta blocking agents	58	7.7	C07A
Proton pump inhibitors	57	7.6	A02BC
Angiotensin 2 antagonists and diuretics	56	7.4	C09DA
Selective serotonin reuptake inhibitors	48	6.4	N06AB
HMG CoA reductase inhibitors	34	4.5	C10AA
Metformin	32	4.2	A10BA02
Vitamin B-complex, plain	23	3.1	A11EA
Paracetamol, combinations excl. psycholeptics	22	2.9	N02BE51
Others	24	3.2	

*ATC: Anatomical Therapeutic Chemical Classification System.

Preventive Medicine Services: Of all FP activities, 26.5% (n=436) fell into this category. Vaccination, follow-up in pregnancy and childhood are subject to a monthly performance check by the government. Failure to achieve a 100% success rate results in a decline in monthly income. Table 6 lists RFEs categorized as preventive medicine services.

Administrative RFEs: These were mainly health certification requests for several reasons. RFEs fell in to this category were sportsmen health certificates (56, 34.7%), pre-employment health

certificates (38, 23.6%), health certificates requested for unclassified reasons (30, 18.7%), health certificates requested for exemption of contribution fee (27, 16.8%), health certificates for driving licenses (5, 3.1%) and pre-marriage health certificates (5, 3.1%).

Other: RFEs classified as "other" included patients' own requests for laboratory tests (40, 34.8%), counselling (32, 27.8%), injections (27, 23.4%), dressings and wound care (16, 14%).

Table 6. The list of preventive medicine services (n=436).

Category of service	n	%
Follow-up of women	122	28.0
Vaccination+follow-up of babies	93	21.3
Follow-up of children	84	19.2
Follow-up of babies	45	10.3
Follow-up of pregnant	37	8.5
Follow-up in puerperal period	24	5.5
Family planning services	13	3.0
Vaccination+ follow-up of children	10	2.2
Obesity screening	8	2.0

Table 7. List of administrative RFEs (n=161)

Category of service	n	%
Sportsmen health certificates	56	34.7
Pre-employment health certificates	38	23.6
Health certificates requested for unclassified reasons	30	18.7
Health certificates requested for exemption of contribution fee	27	16.8
Health certificates for driving licenses	5	3.1
Pre-marriage health certificates	5	3.1

Table 8. RFEs listed under "other" category (n=115)

Category	n	%
Requests for laboratorytests	40	34.8
Counselling	32	27.8
Injections	27	23.4
Dressings and wound care	16	14

DISCUSSION

Little is known about a workday of Turkish FPs after a substantial change, a reform began in 2004. 21,175 FPs provide primary care services. Each FP has a list of 3,621 patients on average which is much more than those in Western countries (4,9,10,11). There are almost 43,000 GPs in the UK serving approximately 63,182,000 people. (9) This means that every GP in UK serves an average of 1,470 people. In 2010, the number of family physicians was 209,000 serving 308,745,538 people in USA; an average of 1,477 people for each FP, very similar to UK (10). These figures are below half of the average registered people per FPs in Turkey. In Holland, approximately 2300 people are registered per FP (11). The high number of registered patients seems to be the major problem in Turkish primary care. Turkish government plans to increase the number of FPs up to over 40,000 in the near future allowing 2,700 average registered people per FP (12).

According to the results of our study, an average of 45.7 contacts was daily made in family practice. In UK it has been estimated that the number of daily contacts was 25.7 (9) In USA, it has been reported that each week the average FP sees patients during 89 office visits, seven hospital visits, two nursing home visits, and one house call;

a daily workload of 19.8 contacts (10). These figures suggest that daily workload of Turkish FP is almost twice of their counterparts. With regard to sex distribution of patients, women tend to use primary care more than men. (59.8% vs. 40.2%) Two previous general practice morbidity surveys; de Silva et al. in Sri Lanka and Mimi et al. in Malaysia have reported similar results (13,14).

Our results clearly suggest that prescription requests of patients are a heavy burden on Turkish primary care. More than a quarter of FPs' daily workload comes from such demands. Approximately 34% of all prescription demands are for drugs prescribed for chronic illnesses documented by an exemption report issued in state or university hospitals. Patients who have an exemption report can get a three-month dosage when prescribed by FPs until the report expires in generally two years. The problem is that in Turkey drugs are sold in packages generally containing 20, 28 or 30 tablets or capsules. This means that multiple drugs in a report will finish at different times leading to unnecessary visits to FPs for repeated prescription demands. In 2012 the government allowed patients to have a six-month dosage for their chronic illnesses with some restrictions. This can be further improved to reduce

the workload of FPs. Also; there are important implications of this practice. FPs are expected to monitor the progress of chronic illnesses diagnosed and treated in secondary and tertiary healthcare facilities. However; there are substantial restrictions in reimbursement of many hypertension and diabetes medications when prescribed by FPs. This significantly limits involvement of FPs in monitoring chronic illnesses and modifying the treatment when needed. Another aspect of this matter is that patients begin to think primary care as the place where they can get their refills much more easily than over-crowded hospitals. Our results have clearly showed that patients frequently use primary care for refills of their medication prescribed in other healthcare facilities.

More than a quarter (26.5%) of all workload of FPS consists of RFEs for preventive medicine. In Turkish primary care a negative performance method is being applied for these services. FPs are given a pre-determined work schematics on information systems they use according to their population. A deviation from this work plan is punished by substantial cuts in salary. An important common problem is the determination of pregnancies and convincing pregnant women to attend to primary care for follow-up visits while they are also being monitored by their gynecologists. Sometimes it is even not possible to contact pregnant women with the communication information provided leading to an important increase in workload just to locate them. However; important improvements have been achieved throughout the years family medicine was implemented in Turkish primary care. Infant mortality rate decreased from 2.23% in 2006 to 0.18% in 2013 (15). Maternal mortality rate decreased from 28.5/100, 000 live births to 15.9/100,000 live births in 2013 (4). Similarly, vaccination rate increased from 81% in 2006 to 97% in 2013 (16). However; how much of this success can be attributed to the changes in primary care is unknown.

Administrative RFEs account for approximately 10% of the workload of FPs in our study. These are mainly medical sportsmanship certificates requested from Ministry of Education or

Ministry of Youth and Sports for almost all extracurricular activities. We think that the necessity for these certificates should be re-evaluated to lessen the workload of FPs.

Respiratory system related RFEs account for 39% of all clinical complaints in our study. This result is in accordance with, Sri Lanka, Malaysia and Singapore primary care surveys reporting respiratory system related RFE rates as most common with frequencies 31.6%, 37% and 29.5%; respectively (13,14,17). Similarly, Şensoy et al. reported that the most frequent diagnosis was upper respiratory tract infections with a frequency of 19.1% among 2,618 applications to a university family medicine center between 2002 and 2004 before the implementation (5). Similarly, a recent study in a primary care setting found that 25.9% of 16,083 patients were diagnosed with upper respiratory tract infections (18).

There are important limitations of this study. First, the participants were volunteers and have not been randomized. Second; all but one participants were family medicine specialists who had the priority to choose more central locations when the health care reform began. Only two FPs worked in rural areas. In addition, Monday was considered as the busiest working day among Turkish FPs and not chosen for house visits or other out-of-office duties limiting our results ability to represent overall workload of FPs.

CONCLUSION

Our results suggest that FPs in Turkey are under severe pressure in terms of workload. Their workload seems to be at least twice of their counterparts in UK and USA. Prescription requests account for an important percentage of this workload. Measures should be taken to lessen this burden. Without a “gate-keeper” function it seems that the role of FPs may not improve further. On the other hand, the high number of patients registered per FP may not allow a “gate-keeper” role feasible in the near future. A nation-wide randomized morbidity and workload survey may elaborate more insight.

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