The Attitudes and Behaviours of Physicians Working in Burdur, Turkey Toward Rational Medicine Use

Burdur'da Görev Yapan Hekimlerin, Akılcı İlaç Kullanımına Yönelik Tutum ve Davranışları

Rational Medicine Use

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Özet

Amaç: Burdur il merkezi ve ilçelerinde, birinci ve ikinci basamakta çalışan hekimlerin akılcı ilaç kullanımı (AİK) ile ilgili tutum ve davranışlarını belirlemek amacı ile bu çalışmanın yapılması planlandı. Gereç ve Yöntem: Tanımlayıcı tipteki bu çalışmaya, Burdur ili merkezi ve ilçelerinde, birinci basamak sağlık hizmetlerinde görev yapan ve ilaç yazan aile hekimleri ile ikinci basamakta çalışan pratisyen hekimler dahil edildi (N=102). Araştırmada, örneklem seçilmeksizin, 01.04.2015 ve 07.07.2015 tarihleri arasında, yüz yüze görüşme tekniği ile, çalışmaya katılmak isteyen tüm hekimlere anket uygulayan bir anketörce hekimlere ulaşıldı. Araştırmaya 98 hekim katıldı. Araştırmadan elde edilen veriler "SPSS 17.0 for Windows" program kullanılarak analiz edildi. Ölçümsel değerler aritmetik ortalama ve standart sapma, sayımla belirlenen değerler sayı ve yüzde olarak hesaplandı. Bulgular: Araştırmaya katılan 98 hekimin, 78 (%79,6)'i erkek, 75 (%76,5)'i evli ve yaş ortalamaları 40,77±8,77'dir. Hekimlerin reçete yazmalarını şekillendiren faktörlerin başında; mezuniyet sonrası okuma 82 (%83,7), farmakoloji dersi 75 (%76,5) ilk sıralarda yer alırken, ilaç firması tanıtımlarının 22 (%22,4) en az önemli faktör olduğu görüldü. Hekimlerin reçete yazarken en önemli kriterleri; 97 (%99,0) ile ilacın etkinliği ve 96 (%98,0) ile ilacın güvenliği yer aldı. Reçete yazarken sorunla karşılaşıldığında; en sık 68 (%69,4) ile ilaç rehberlerine, 45 (%45,9) ile meslektaş görüşü ve 31 (%31,6) ile tıp kitaplarına başvurdukları belirlenmiştir. Hekimler reçete yazarken hastanın öyküsü ile ilgili olarak; 90 (%91,8)'i ile kullandığı ilaçları, 85 (%86,7)'i gebelik durumunu sorgulamaktadır. Hekimler, hastaların 98 (%100)'i kendilerine istedikleri ilaçları yazdırmak istediklerini ancak sadece 8 (%8,2)'i her zaman istenilen ilacı yazarken, 88 (%89.8)'i bazen yazdıklarını belirmişlerdir. Yazdırılmak istenen ilaçların başında 86 (%87,8) ağrı kesiciler, ikinci sırada 48 (%50,5) oranla antibiyotikler gelmektedir. Hastaya ilaç yazarken 41 (%41,8)'i ilaç şirketlerinin temsilcilerinin yaptığı promosyonların etkili olduğunu belirtmişlerdir. Hekimlerin; 75 (%76,5)'i bazen tanı ve tedaviye yönelik tetkik isterken, 76 (%77,6)'sı tanı ve tedaviye yönelik bilgi vermekte, 57 (%58,2)'si tanı ve tedaviye yönelik verdiği bilgiyi yeterli görmektedir. Tartışma: Hekimlere, hastalar tarafından, özellikle ağrı kesici ve antibiyotik yazılması talep edilmekte, hekimler bu isteklere AIK bakış açısıyla cevap verememektedir. Çalışmamız, hekimlerin sürekli tıp eğitimi kapsamında AİK ilkeleri konusunda bilgilendirilmelerinin gerekliliğini ortaya koymuştur.

Anahtar Kelimeler

Akılcı İlaç Kullanımı; Hekim; Antibiyotik; Ağrı Kesiciler; Burdur; Türkiye

Abstract

Aim: This study aimed to define the manner and behaviour of first line treatment physicians' and general practitionars that work in the second line treatment hospitals regarding rational medicine use (RMU) in the centre of Burdur and its surrounding districts. Material and Method:This descriptive study includes first line treatment physicians' prescribing medication and general practitionars that work in the second line treatment hospitals (total N=102) in the centre of Burdur, Turkey and its surrounding districts. There was no sampling for the study. All the physicians who agreed to participate were reached through a survey taker with a face-to-face interview between April 1, 2015 and July 7, 2015. 98 physicians participated in the study. The data from the study were analysed using the SPSS 17.0 for Windows program. Measurable values were described as arithmetic mean and standard deviation, and countable values were calculated as numbers and percentage. Results: In the study including 98 physicians, 78 (79.6%) of them were males, 75 (76.5%) were married, and their average age was 40.77±8.77. The leading factors affecting physicians' prescriptions were post-graduate studies as cited by 82 (83.7%) and pharmacology lessons for 75 (76.5%). Drug company presentations were the least important factor, cited by 22 physicians (22.4%). The most important criteria for physicians in prescribing were the effectiveness of the drug as cited by 97 (99%) and reliability of the drug for 96 (98%). Also, 98 of the physicians (100%) stated that patients asked them to prescribe certain drugs. However, only eight physicians (8.2%) indicated that they always prescribed the drug demanded by the patient while 88 physicians (89.8%) indicated that they sometimes did this. Discussion: Physicians are frequently asked by patients to prescribe painkillers and antibiotics. However, the physicians cannot always meet these demands from the RMU point of view. Our study revealed that physicians should be informed about RMU principles within the scope of continuing medical education. This topic is important for patients' lives and safety.

Keywords

Rational Medicine Use; Physician; Antibiotics; Painkillers; Burdur; Turkey

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Introduction

A drug is a dosage product that is used to protect humans from diseases, for diagnosis, for treatment, or to fix or change a human function. A drug generally includes an agent or agents formulated with one or more inactive ingredients [1]. While drugs eliminate the negative factors threatening human health and life if used properly, they may cause deaths when used improperly. Thus, proper use of prescription drugs plays an important part in public health [2]. At the same time, there is sample evidence that there is a large missed potential because of the way in which medicines are used: the right medicine does not always reach the right patient, and approximately 50% of all patients fail to take their medicine correctly [3]. For this reason, the World Health Organization (WHO) has emphasized the proper use of drugs and defined rational medicine use in the Nairobi meeting in 1985 [4]. The WHO defines rational medicine use as follows: "Medicine use is rational (appropriate, proper, correct) when patients receive the appropriate medicines, in doses that meet their own individual requirements, for an adequate period of time, and at the lowest cost both to them and the community. Irrational (inappropriate, improper, incorrect) use of medicines is when one or more of these conditions is not met" [5]. Any mistake that is directly or indirectly related to the use of drugs is defined as irrational use of medicines (IUM). The WHO states that the misuse of drugs has reached a critical dimension. Even the use of some drugs in "medico-legal" borders are known to cause negative results such as drug tolerance, resistance, side effects, and even drug addiction. This is a public problem concerning healthy individuals as well as health teams and patients [6]. Since it is the physicians who chooses and prescribes the best drug among the alternatives following a through evaluation of the patient's clinical condition, the most important component of rational drug use is the physician's responsibility and prescribing habits. The success of this process depends on the health authorities' education of doctors and patients. In Turkey, the Turkish Republic Health Ministry addresses this by informing and training health workers. Because rational knowledge and manner of physicians are significant and no research has been conducted to date in Burdur on this topic, this study has been planned to define physicians' manners and behaviours related to rational medicine use.

Material and Method

This descriptive and cross-sectional study was planned to include all first line treatment physicians and who wrote prescriptions and general practitionars who works second line treatment health foundations (total N=102) in the centre of Burdur, Turkey and its surrounding districts. To collect data for the research, we prepared a questionnaire including 23 questions aimed at assessing physicians' descriptive knowledge and manners toward rational medicine use. The study began with the approval numbered 06.03.2015-E.9266 given by the Ethical Committee of Mehmet Akif Ersoy University. In the study there was no sampling. All the physicians willing to participate (98 out of 102) were reached through a survey taker with a face-to-face interview between April 1, 2015 and July 7, 2015. Each face-to-face interview required only 25-35 minutes of the physician's time. Participants were given information about the questionnaire and their verbal consent was acquired on a volunteer basis. The data from the research were analysed using the SPSS 17.0 for Windows program. Measurable values were described as arithmetic mean and standard deviation, and countable values were calculated as numbers and percentages.

Results

Of the 98 participating physicians, 78 (79.6%) are male, 75 (76.5%) are married, 54 (55.1%) live in surrounding districts and 78 (79.6%) work at first line treatment health foundations. The average age is 40.77±8.77. The average working hours of the physicians is 16.4±10.3. The average number of patients examined by the physicians daily is 71.12±55.06 and the average time period for examining patients is 8.1±4.08 minutes. The physicians were the most knowledgeable about drug application (86.7%, n=85) and daily dosage (82.7%, n=81). They were least knowledgeable about drug price (28.6%, n=28) and interactions (32.7%, n=32) (Table 1). When the physicians were asked to rank the factors influencing their prescribing behaviour, post-graduate studies (83.75%, n=82) and pharmacology class (76.5%, n=75) were reported as the most important factors. In-service education (72.4%, n=71), prescriptions used in the clinic internship (68.4%, n=67), and consulting with colleagues (62.2%, n=61) also were found to be significant factors affecting prescription behaviour. The presentations of drug companies were rated least effective (22.4%, n=22) (Table 1).

Table 1. Knowledge of physicians about rational medicine use and factors affecting their prescription

	NUMBER	N(%)
Level of price knowledge	28	28.6
Drug interactions	32	32.7
Bioavailability	39	39.8
Side-effects	41	41.8
Contraindications	44	44.9
Bioequivalence	44	44.9
Mechanism of action	53	54.1
Drug indications	79	80.6
Daily dosage	81	82.7
Way of use	85	86.7
Factors affecting prescription		
Presentations of pharmaceutical companies	22	22.4
Consulting colleagues	61	62.2
Prescriptions during clinical internship	67	68.4
In service education	71	72.4
Pharmacology lecture	75	76.5
Post-graduate studies	82	83.7
Total	102	100,0

Drug effectiveness (99%, n=97) and drug reliability (98%, n=96) were among the significant criteria considered by the physicians when prescribing. The price of the drug was determined to be of little importance (Table 2). When faced with a problem during prescription, 69.4% (n=68) of the physicians referred to medical guidelines, 45.9% (n=45) referred to the opinion of colleagues, and 31.6% (n=31) referred to medical books. Drug company presentations (12.2%, n=12) and senior physician opinion (25.5%, n=25) were the least preferred choices (Table

Table 2. Patients' manner of rational prescription

	NUMBER	N(%)
Important factors during prescription		
Drug efficacy	97	99.0
Drug reliability	96	98.0
Drug availability	95	96.9
High bioavailability	90	91.8
Price of drug	38	38.8
Broad indications	56	57.1
Suitability of the drug form	81	82.7
Criteria utilised during prescription		
Medical guidelines	68	69.4
Opinions of colleagues	45	45.9
Scientific publications	37	37.8
Medical books	31	31.6
Specialist doctor	25	25.5
Presentations of pharmaceutical companies	12	12.2
Investigated titles during patient anamnesis		
Drugs used	90	91.8
Hepatopathology	60	61.2
Nephropathology	63	64.3
Chronical disease	83	84.7
Pregnancy Status	85	86.7
Age	61	62.2
Social insurance	22	22.4
Purchasing power	21	21.4
Total	102	100.0

2). In the survey analysis of the doctors's behaviour, the drugs they were currently being used or that had used in the past (91.8%, n=90) and pregnancy (86.7%, n=85) were of highest importance. Cost to the patient and the patient's ability to pay was regarded as important by 22.4% (n=22) of the physicians (Table 2).

All of the physicians (100%, n=98) stated that patients asked them to prescribe certain drugs. However, only 8.2% (n=8) of them reported that they always prescribed the demanded drug, while 89.8% (n=88) stated that they sometimes prescribed the demanded drugs. The most demanded drugs were painkillers, cited by 87.8% (n=86) of physicians, and antibiotics at 50.5% (n=48). The promotions of drug company representatives were stated to be ineffective by 58.2% (n=57) of the physicians. Additionally, it was observed that 76.5% (n=75) of the physicians sometimes asked for examination regarding diagnosis and treatment, 77.6% (n=76) of them gave information about the diagnosis and treatment to the patients, and 58.2% (n=57) of them considered that only informing the patient was sufficient.

Discussion

Important findings about the knowledge, manner, and behaviour of primary and secondary physicians working in Burdur related to RUM were obtained through this research. A study of family physicians conducted by the Turkish Ministry of Health concluded that 61.2% knew the usage of medications well, 55.9% the daily dosage, 52.2% the indications, and 57.4% the side effects [7]. Another study from 2015 relating to the drugs prescribed, physicians were observed to have a full knowledge of posology as well as the method of use (59.8%), side effects (58.6%), indications (56.3%), and drug interaction (44.8%). However, they had only an intermediate level of knowledge about drug prices (50.5%) [8]. In the study of Akıcı, it was determined that 11.6% of the physicians knew the prices of the drugs that they prescribed [9]. By comparison, in Saudi Arabia, physicians either knew "very little" (7%) or knew "nothing at all" (5%) about the drug price and price differences [10]. In accordance with the literature, our study has concluded that during the prescription of drugs, dosage and method of application are consistent with RMU but there is insufficient knowledge about prices. The reason is that the budget for health is restricted in Turkey and in many developing countries. Because they are restricted, the available resources should be used in the best possible way. Thus, in order to use drugs in a rational way, economic evaluations should be made about the medications in addition to general assessment of their effectiveness and reliability [11].

It has been observed in our study that the factors affecting the prescribing behaviour of the physicians include post-graduate studies, pharmacology classes, and in-service education. Similar results were observed in the study made with 157 practitioners in Erzurum. Presentations of drug companies were low-ranking factors, as in our study [12]. In another study including 380 physicians in seven large districts of Ankara, the basic education of the medical faculty and their post-graduate education were observed to be among high ranking factors [13]. Another study including 120 physicians in Kırıkkale determined that 73.6% of the physicians attended in-service education after graduation [8]. It is obvious that physicians are interested in RMU but are in need of training. Results of research into pharmacologists lead us to this opinion. According to this research, 27.8% of the lecturers and assistants were reported to have RMU training [14]. We believe that the physicians working at primary health services and hospitals should be repeatedly informed about the principles of RMU as part of their continuing medical education and that RMU use lectures should be given at medical faculties.

It is stated in our study that the sources of information most frequently referred to by physicians during prescription are medical guidelines (vademecum) (69.4%), opinions of colleagues (45.9%), and scientific publications (37.8%). Similarly, Saygılı's research identified these sources as vademecum (82.1%), the internet (53.8%), and diagnosis-treatment guidelines (51.3%) (8). Vançelik stated that physicians referred to medical guidelines (73.7%), scientific sources (55.3%), opinions of colleagues (52.0%), medical books (48.7%), and presentation documents of drug companies (33.6%) [12]. Greek doctors rely more on scientific publications and medical textbooks and less on pharmaceutical representatives [15]. It is seen that the sources physicians refer to during prescribing are similar across multiple studies. It can be considered as a process initiating RMU that physicians refer to factual sources when prescribing. We think that this process can be easily handled through appropriate, reliable guidelines considering the most effective drug treatment and the cost. On the other hand, Mahajan et al. found that 83% of the physicians benefited from medical representatives and 69% from the collected articles in journals and from the internet as a source of information [16]. In the study of the Turkish Ministry of Health, the most frequently utilized sources

by the physicians during prescription included "research and presentations of pharmaceutical companies" for both family physicians (78.9%) and senior physicians (74.3%) [7]. In Congo, sources of antibiotic prescribing included pharmaceutical companies (73.9%), antibiotic guidelines (66.3%), university courses (63.6%), internet sites (45.7%), and WHO guidelines (26.6%) (17). On the other hand, pharmaceutical representatives were preferred as an information source by 61.14% of Cypriot doctors and 51.99% of Greek doctors (15). The costs of promotions of pharmaceutical companies vary from country to country and generally comprise 15% of the drug expense. As the "information transfer" of promotional studies are considered, it is seen that pharmaceutical companies also attempt to compensate for physicians' lack of knowledge due to their educational insufficiency [8]. It is observed worldwide that training on RMU is needed and should be continual. We believe that education should be planned according to a country's conditions and that the needed educational and legal regulations should be enacted in order to maintain and support the newly-achieved manners and behaviours.

According to the findings of our research, the most important factor considered by the physicians during prescription is found to be "the clinical efficiency of the drug" (99%). Similarly, in a study conducted in Ankara, the most effective factor was found to be the efficiency of the drug. In a study including 152 practitioners working in central Erzurum, 90.1% of the physicians stated that the most important criterion during prescription was the efficiency of the drug [13]. Likewise, in the study of Theodorou in Greece and the Greek-populated Southern Cyprus, the most important factor affecting physicians' prescription behaviour was determined to be the efficiency of the drug [15]. In most cases, choice of medication was based on familiarity and past experience with a drug, because the side-effect profile was influential in choosing a medication with in a particular class [18]. We observe that active ingredient, reliability, and fewer side effects are of significance to the physicians.

In our study, the physicians most often took into account the patient's medication history (91.8%) and pregnancy (86.7%) and least often the cost to the patient (21.4%). In the study by the Turkish Ministry of Health, 84.2% of the family physicians and 78.5% of the senior physicians took into account the patient's age as obtained through anamnesis; 83.6% of the family physicians and 78% of the senior physicians took into account pregnancy and breast-feeding status; 67.1% of the family physicians and 65.8% of the senior physicians always referred to the patient's drug allergies; and 45.7% of the family physicians and 38.6% of the senior physicians frequently considered the cost to the patient [7]. Having the physicians take anamnesis was considered as an advantageous factor for diagnosis. However, the physicians' consideration of the patient's ability to purchase the prescribed drugs seemed partially insufficient. For instance, in Singapore, family physicians are highly considerate of the patient's ability to purchase drugs for the treatment of asthma [19]. We think that inattention to drug cost may cause many more problems in the future, especially in the cases of chronic diseases. Therefore, we believe that physicians should know the financial status of the patient and should act accordingly.

In our study, the physicians stated that while prescribing they provided information about the period of treatment (88.8%), the method of using the drug (87.8%), and daily dosage (85.7%). In the studies of the Turkish Ministry of Health, 59.1% of the family physicians and 66.1% of the senior physicians always informed the patients about the dosage of the drugs; 56.7% of the family physicians and 64.6% of the senior physicians always informed about the period of treatment; 56.5% of the family physicians and 62.3% of the senior physicians always informed about the method of application. In contrast, 88.8% of the family physicians and 85.8% of the senior physicians rarely gave information about the drug price [7]. However, in a study including patients in Mersin, 15.7% of patients did not take all the drugs prescribed, 43.7% stopped using the drugs before the end of the required period, and 9.7% used drugs at a dosage different from what the physician advised [20]. The common irrational medicine use problems in our country are taking medication without consulting a physician, giving and taking advices about drugs from others, stocking drugs at home, taking drugs according to previous experiences with similar complaints, not taking drugs at the time prescribed, using drugs at an improper dosage, and not using drugs for the periods advised by the physician [21]. RMU is not only the responsibility of physicians; the awareness of patients should be raised as well, because patients' expectations and demands may put pressure on physicians. The way in which the drug is used and the period of drug use is also helpful for active and passive efficiency of RMU. We recommend that visual, written, and audio educational materials and trainings should not be ignored in developing RMU policies.

All of the physicians attending in our study stated that patients demanded prescription of certain drugs, while only 8.2% of the physicians reported that they prescribed the drugs demanded everytime, while 89.8% of them prescribed the demanded drugs sometimes. According to the data of the Turkish Ministry of Health, it was determined that "medical advice for prescription" is at the second frequency (47.5%) for family physicians and at the third frequency for the senior physicians (48.7%). Accordingly, it is notable that the ranking of the reasons for patients to consult physicians "aiming at prescription" is much higher with senior physicians. Similarly, in studies conducted primarily in İzmir in 2003 and in Giresun in 2004, it was reported that "medical advice for prescription" ranked at the top in the patients' consultations to the community clinics (respectively, 52.5% and 58.1%) [7]. Patient pressure was perceived as a factor contributing to over use of drugs (antibiotics) in the community by nearly two-thirds (61.9%) of respondents, where as only one-third (34.3%) did so in the hospital setting [17]. In other words, we can observe in the literature that physicians may prescribe according to the demands or expectations of patients. This factor seems significant in our country and abroad. We think that the opinions of patients on using drugs for all complaints, apart from the drugs used for chronic diseases, is one of the crucial elements in the scope of RMU.

In our study, the drugs demanded by the patients were firstly painkillers (87.8%) and secondly antibiotics (50.5%). According to the findings of the Turkish Ministry of Health, patients mostly demand "painkillers and rheumatic medications" (respectively 76% and 50.5%). In the second rank of drug demanded from the

Family Health Centres are "common cold medications" (49%) and "antibiotic group medications" (26.2%) [7]. According to a study including patients in Mersin, the drugs most frequently found in the houses of patients are painkillers, medical dressing materials and antibiotics. Other studies have found that painkillers (57.8%) are generally or always bought unprescribed and that people without health insurance are most likely to buy unprescribed painkillers [20]. Both of these findings show that the results of our study are consistent with both the data from the Ministry of Health and the findings about patient usage. In India, important factors identified for antibiotic prescriptions by doctors were diagnostic uncertainty, perceived demand and expectation from the patients, practice sustainability and financial considerations, influence from medical representatives, and inadequate knowledge. Doctors also identified certain patient behaviour characteristics and lax regulations for prescribing and dispensing antibiotics as aggravating the problem of antibiotic misuse. A qualitative study conducted in the UK has shown that often general practitioners (GPs) prescribe antibiotics to their patients as they believe it is their duty to do the best for the mandate concerned about more the immediate and serious problems rather than the theoretical complications of increasing antimicrobial resistance [22]. Actually, the frequency of antibiotics use is increasing worldwide, just as in Turkey. Therefore the doctors of other countries also feel themselves under pressure. But in China, the ratio of antibiotics used per prescription was 29.9%, which is close to the WHO's standard of no higher than 30% [23]. They attribute this relatively low rate of antibiotics use to "education." Promoting the education of medical knowledge for doctors, reinforcing the promotion of rational drug use to doctors, and initiating performance evaluation for doctors are effective ways for improving prescription quality in Chinese county hospitals. Considering that the share of drug costs among health expenses in Turkey is 25% (7), the results of our findings seem to confirm this results. Although there is some advancement in RMU in Turkey in parallel with the rest of the world, problems about drug use continue [21]. In order to raise awareness about RMU, we think that national educational plans, applications, visual and written guidelines and documents should be prepared and publicized by the social and national media. We consider RMU as a process requiring a public-based approach that includes physicians, patients, and pharmacists.

Conclusion

According to our study, patients demanded that physicians prescribe certain drugs, especially painkillers and antibiotics, but physicians cannot meet these demands according to the principles of RMU. Our findings underscore that physicians should be informed regarding the RMU principles as part of their continuing medical education. The significance of RMU should be emphasized during in-service training. Memorable slogans related to RMU should be displayed in open public spaces, especially in health foundations and in the mass media. We believe that preventing the unprescribed and illegal sales of drugs such as painkillers and antibiotics that may cause negative results due to unconscious use would help to control consumption of such drugs.

Competing interests

The authors declare that they have no competing interests.

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