MCBU SBED
MANİSA CELAL BAYAR ÜNİVERSİTESİ SAĞLIK BİLİMLERİ ENSTİTÜSÜ DERGİSİ
MANISA CELAL BAYAR UNIVERSITY JOURNAL OF INSTITUTE OF HEALTH SCIENCE
ISSN: 2147-9607

ARAŞTIRMA MAKALESİ
RESEARCH ARTICLE
CBU-SBED, 2018, 5(1):10-16

The Assessment of Knowledge and Attitudes of Personnels working in a Training and Research Hospital located in Central Anatolia on Rational Drug Use

Fikriye Yasemin ÖZATİK[1], Ülken TUNGA BABAOĞLU[2], Kevser EROL[3], Didem ARSLANTAŞ[4], Bilgin KAYGISIZ[3]

[1]Dumlupınar Üniversitesi, Tıp Fakültesi, Tıbbi Farmakoloji AD./KÜTAHYA
[2]Ahi Evran Üniversitesi, Tıp Fakültesi, Halk Sağlığı AD./KIRŞEHİR
[3]Osmangazi Üniversitesi, Tıp Fakültesi, Tıbbi Farmakoloji AD./ ESKİŞEHİR
[4]Osmangazi Üniversitesi, Tıp Fakültesi, Halk Sağlığı AD./ ESKİŞEHİR
*Sorumlu Yazar / Corresponding Author: Fikriye Yasemin ÖZATİK, e-mail: fyozatik@hotmail.com

Gönderim Tarihi / Received:19.03.2018
Kabul Tarihi / Accepted: 28.03.2018

Öz

AMAÇ: Akılcı ilaç kullanımı süreci, hastanın probleminin tanımlanmasından, tedavinin sonuçlandırılması ve izlenmesini kapsayan sistematik bir yaklaşımdır. Hastane çalışanlarının AİK ilkelerine uygun davranmaması akılcı olmayan ilaç kullanımı sorununu doğuracak ve ilaçların akılcı ilaç kullanım döngüsünü sekteye uğratacaktır.
Bu çalışmanın amacı; İç Anadolu bölgesinde hizmet vermekte olan bir eğitim araştırma hastanesinin çalışanlarının AİK ile ilgili farkındalık düzeylerini belirlemektir.
YÖNTEM ve GEREÇLER: Çalışmanın evrenini, Eğitim ve Araştırma Hastanesi'nde çalışan hekim (n=130), hemşire (n=310) oluşturmuştur. Anket formunun uygulandığı günlerde izinde olan ve çalışmaya katılmak istemeyenler nedeniyle 64 hekim, 148 hemşire çalışmaya dahil edilmiştir. Veriler, Türkiye İlaç ve Tıbbi Cihaz Kurumu(Ankara/Türkiye), Akılcı İlaç Kullanımı biriminin hazırlamış olduğu anketler kullanılarak toplanmıştır.
BULGULAR: Çalışmaya katılan hekimlerin %29,7'si hastalar tarafından talep edilen ilaçları hiçbir zaman muayene etmeden ilaç reçete etmediklerini bildirirken, %40.6'sı sadece kronik hastalıkların ilaçlarını reçete ettiklerini, %18,8'i ise reçete etmedikleri takdirde tartışma çıktığını belirtmişlerdir. %50,0'ı ilaçların uygulama şeklini, %48,4'ü ilaçların günlük dozunu ve %42,2'si tedavi süresini her zaman bilgisini verdiklerini belirtmişlerdir. Çalışmaya katılan hemşirelerin karşılaştıkları ilaç uygulama hatalarına bakıldığında, %53,4'ü ilaçların atlanması, uygulanmaması, %49,3'ü ilacın yanlış zamanda uygulandığını ve %18,9'u ilacın yanlış hastaya uygulandığını belirtmişlerdir.
SONUÇ: Hekim ve hemşirelerin bilgi ve tutumlarını artırmak amacı ile çalışmanın yapıldığı hastanede AİK ile ilgili her iki gruba yönelik çalışmalar yapılması, bilgi ve tutumların eğitimlerle desteklenmesi uygun olacaktır.
Anahtar Kelimeler: *Akılcı ilaç kullanımı, hekim, hemşire*

Abstract

INTRODUCTION: Rational drug use(RDU) period is a systematic approach which consists identifying the problem of the patient, concluding and monitoring the treatment. The failure of hospital staff to comply with the principles of RDU will lead to the problem of unethical drug use and to the RDU. The aim of the study is, to determine the awareness level of employees in a Training and Research Hospital located in Central Anatolia which study is held regarding to RDU.
METHODS: Nurses and Physicians working at the Hospital formed the population of the study. 64 physicians and 148 nurses were included in the study. Because they were on the day of the survey form and didn't participate in the study. Data were collected by using surveys which were prepared by Turkey Medicines and Medical Devices Agency (Ankara/Turkey), RDU Unit.
RESULTS: 29,7% of physicians reported that they did not prescribe medicines demanded by the patients without ever examining the patients. 18,8% of physicians stated that they had a discussion with patients if they did not prescribe. According to this, 50% of physicians stated that they always inform their patients about drug application method, 48.4% of physicians always inform about daily dosage of drugs and 42.2% of them always inform about treatment period. For medicine application errors which participating nurses most frequently encounter, they said skipping medicines (53.4%), applying medicines at wrong times (49.3%) and applying medicine to wrong patients (18.9%).

MCBU SBED
MANİSA CELAL BAYAR ÜNİVERSİTESİ SAĞLIK BİLİMLERİ ENSTİTÜSÜ DERGİSİ
MANISA CELAL BAYAR UNIVERSITY JOURNAL OF INSTITUTE OF HEALTH SCIENCE
ISSN: 2147-9607
ARAŞTIRMA MAKALESİ
RESEARCH ARTICLE
CBU-SBED, 2018, 5(1):10-16

CONCLUSION: In order to increase the knowledge and attitudes of physicians and nurses, it will be appropriate to carry out studies and knowledge and attitudes towards training for both groups related to RDU in the hospital where the work is done.

Keywords: *Health promotion, health perception, worker health*

INTRODUCTION

Rational Drug Use (RDU) is systematic modality comprising of defining of patients' problem, determining therapeutic targets, choosing a proper treatment with proven efficacy among various options, prescribing acceptable drugs, clearly informing patients with suggestions, monitoring and evaluating treatment outcomes (1). This modality involves not only the assignments of physicians but also the mission of nurses frequently communicates with patients. It is expected that the behaviors and attitudes of physicians and nurses should be relevant on the principles of RDU to achieve effective RDU. One of the most significant responsibilities of physicians and nurses is to ensure using drugs in safety criteria. The responsibility of physicians is to administer proper drugs to properly diagnosed patients with proper doses and costs while the responsibility of nurses is to perform the administration of proper drugs to proper patients with proper doses. Nurses should perform their responsibilities considering the effects, adverse effects, administration ways of drugs and drug interactions (2).

In this study, we primarily aimed to determine the awareness of doctors and nurses on RDU who are working in a Training and Research Hospital located in Central Anatolia. Secondly, if needed, we aimed to increase the awareness on RDU by organising trainings.

METHODS

We performed a descriptive study to investigate the knowledge and attitudes of doctors and nurses on RDU. The data were collected by using the national questionnaires which were prepared by the RDU department of Turkish Medicines and Medical Devices Agency (Ankara/TURKEY) (3). We obtained permissions of the agency to use the questionnaires. This study was conducted in an educational research hospital located in middle anatolia region of Turkey between september 2016 and november 2016. We aimed to include the whole population of doctors (n: 130) and nurses (n: 310) working in this hospital instead of obtaining samples from this population. However, 64 doctors and 148 nurses were included in the study because of their absence in the hospital due to rest day or their unwilingness to participate in the study. The questionnaires were filled by face to face meetings with the participants of the study. Different questionnaires were used for doctors and nurses. There were 17 questions in the questionnaire for doctors and 18 questions in the questionnaire for nurses. The questions on age, gender and the duration in his/her professional experience of participants were included in the demographic form. The participants were asked to response to one of the answers of the questions found in the RDU knowledge and attitude form. Verbal approval of the participants and written permissions of the Public Hospitals Union were obtained before starting the study. The ethical approval of the study were obtained from Ethics Committee of Ahi Evran University for Non Clinical Researchs on Humans. The data were statistically analysed by using SPSS.20.00 program and the descriptive data were expressed as percentages, numbers and means.

RESULTS

The data of the responses of doctors to RDU questionnaire

The sociodemographic features of doctors participating in the study is shown at Table 1. 46.90% of doctors were between the ages 26 and 30 and 64.10% of them were male. 32.8% of the duration of professional experience was between 11 and 15 years and 87.5% of them were specialists (Table 1).

Table 1: Socio-demographic characteristics of the physicians participating in the study

Variables	**Number (n)**	**Percentage (%)**
Female	23	35,9
Male	41	64,1
Age		
Between 24-30	4	6,3
Between 31-40	30	46,9
Between 41-50	26	40,6
Between 51-64	4	6,3
Professioanal Experience		
1-3 years	5	7,8
4-10 years	9	14,1
11-15 years	21	32,8
16-20 years	11	17,2
21 years and over	18	28,1
Title		
General practitioner	8	12,5
Specialist physician	56	87,5

Table 2 presents the data of in service training status of doctors after graduation. 68.70% of doctors mentioned that they participated in in service trainings and RDU trainings. 34.40% of them stated that they participated

in these trainings in medical school while 18.80% of them stated that they participated in trainings organised by Ministry of Health (Table 2).

Table 2: Occupational training participation distributions of physicians participating in the study

Variables	Number (n)	Percentage (%)
Vocational training participation status		
Yes	44	68,7
No, I don't have time	14	21,9
No, not organization	6	9,4
Participation in RDU training		
Yes	44	68,75
No	20	31,25
Place of training		
Faculty of medicine	22	34,4
Ministry of Health	12	18,8
Congress	6	9,4
Pharmaceutical companies	3	4,7
Professional associations	1	1,6

35.9% of doctors (n:23) indicated that they reported adverse drug effect among them 28.1% (n:18) stated that they reported 1 or 2 adverse drug effect declaration. 92.2% of doctors (n:59) mentioned that they benefit from source of information when prescribing and mostly from vademecum (71.9%), internet (46.9%), diagnosis and treatment guidelines (43.8%).

The knowledge status of doctors on the drugs prescribed by them are shown in Figure 1. 25% , 17.2% and 14.1% of the participants mentioned that they have high information on indications, posology and use of drugs in special conditions, respectively. 7.8% and 4.7% of the participants stated that they have miserable information on bioequivalence and pharmacological features and warnings, respectively (Figure 1).

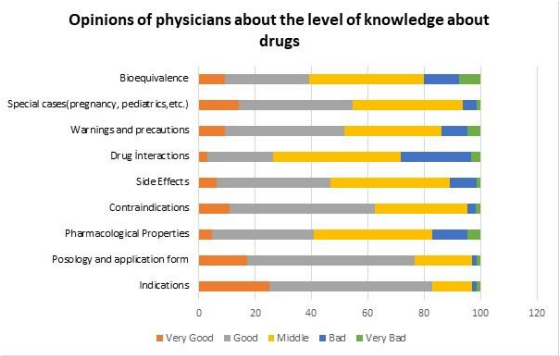

Figure 1: Opinions of physicians about the level of knowledge about drugs

29.7% of doctors indicated that they never prescribed without a physical examination, 40.6% of doctors reported that they prescribed only for chronic illnesses, 18.8% of doctors stated that had arguments if they did not prescribe. Figure 2 shows the data of what kind of anamnesis information doctors collected from patients when prescribing. 45.3% reported that they questionized the use of other drugs while 35.9% mentioned that they paid attention on the age status of patients, and 34.4% of doctors marked that they always paid attention whether the patients had drug allergy or not (Figure 2).

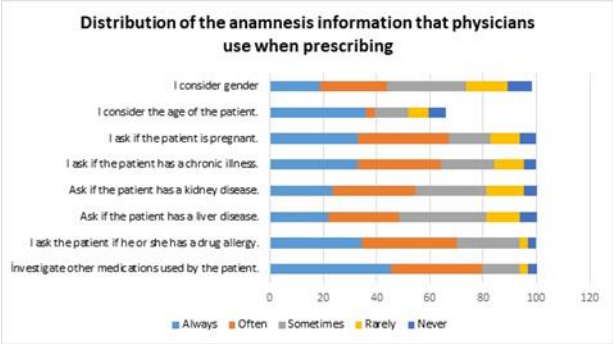

Figure 2: Distribution of the anamnesis information that physicians use when prescribing

The frequency of the information given by doctors to patients on drugs are shown at Table 3. 50.0%, 48.4%, 42.2% of doctors declared that they always informed the patients about the administration ways of drugs, daily doses of drugs and the duration of treatment, respectively. On the other hand, 20.3%, 18.8%, 12.5% of doctors notified that they never informed the patients about drug or food interactions, mechanisms of action of drugs, warnings on the usage of drugs, respectively (Table 3).

Table 3: Distribution of the frequency of information given by physicians about drugs to their patients

Variables	Every time	Often	Sometimes	Rarely	Never
Name of the drug	28,1	28,1	29,7	7,8	6,3
Method of application	50,0	37,5	6,3	6,3	0
Daily dose	48,4	32,8	14,1	3,1	1,6
Treatment duration	42,2	31,3	9,4	15,6	1,6
The mechanisim of the action of the drug	4,7	15,7	32,8	28,1	18,8
Side effect	15,6	32,8	25,0	15,6	10,9
The prize of the drug	3,1	7,8	17,2	26,6	45,3
Interaction with other drugs / nutrients	4,7	14,1	39,1	21,9	20,3
Activities that the patient should stay away from	7,8	18,8	45,3	17,2	10,9
When the patient should leave the medicine	25,0	35,9	17,2	17,2	4,7
Other warnings about medicines	15,6	20,3	37,5	14,1	12,5

The data of the responses of nurses to RDU questionnaire

The sociodemographic features of nurses participating in the study is shown at Table 4. 50.70% of nurses were between the ages 36 and 50 and 89.20% of them were female. 42.6 of the participants were graduated from vocational school of higher education and 44.3% of the duration of professional experience was between 11 and 15 years. 79.1% of nurses mentioned that they participated in in service trainings (Table 4).

Table 4: Sociodemographic characteristics of the nurses participating in the study

Variables	Number (n)	Percentage (%)
Female	132	89,2
Male	16	10,8
Age		
Between 18-25	13	8,8
Between 26-35	58	39,2
Between 36-50	75	50,7
Between 51-64	2	1,4
Professioanal Experience		
1-3 years	11	7,4
4-10 years	14	9,5
11-15 years	67	44,3
16-20 years	29	19,6
21 years and over	27	18,2
Education status		
High school	60	40,6
College	63	42,6
Faculty	24	16,2
Master/PhD	1	0,7
Title		
Responsibl nurse	12	8,1
Nurse	136	91,9
Vocational training participation status		
Yes	117	79,1
No, I don't have time	16	10,8
No, not organization	14	9,5
No, I'm not interested	1	0,7

68.2%, 64.9%, 45.3% of nurses were reported that they got information about the drugs they administered from doctors and pharmacists, their colleagues, reference books on drugs, respectively. 53.4%, 49.3%, and 18.9% of nurses mentioned that they missed the administration of drugs, administered drugs on inaccurate schedule and administered drugs to wrong patients, respectively (Figure 3).

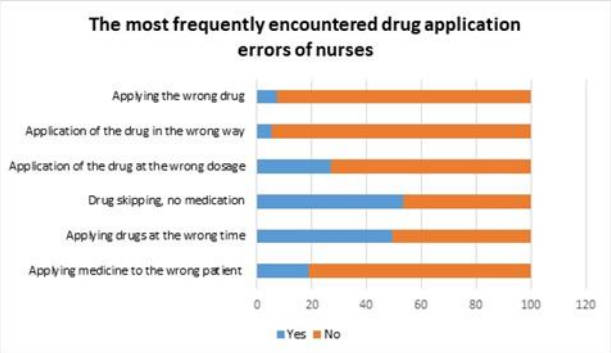

Figure 3: The most frequently encountered drug application errors of nurses

The knowledge status of nurses on the drugs administered by them are shown in Figure 4. 60.1% and 39.2% of the participants mentioned that they have high information on the way of administration and intended use, respectively. 10.8% and 8.1% of the participants stated that they have miserable information on warnings and precautions and drug interactions, respectively (Figure 4).

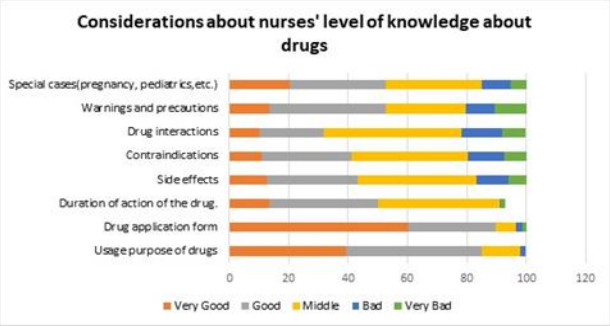

Figure 4: Considerations about nurses' level of knowledge about drugs

64.9% of nurses (n:96) expressed that they always inquired the history of drug and food allergy before they administered drugs while 61.5% of nurses (n:91) indicated that they delivered the drugs belonging to patients who lost their lives to pharmacy. In addition, 72.3% (n:107) of nurses stated that they informed the patients about usage recommendations, the way of administration, dose intervals of drugs while 20.3% of nurses (n:30) mentioned that they only informed patients if doctors asked them. 62.1% of nurses indicated that they reported unexpected adverse drug effects.

DISCUSSION

In this study, we investigated the awareness and attitudes of doctors and nurses on RDU who are working in a Training and Research Hospital located in Central Anatolia. The results of the study were analysed in two categories: the results of the responses of doctors to RDU questionnaire and the results of the responses of nurses to RDU questionnaire. Accordingly, 68.70% of doctors mentioned that they participated in in service trainings and RDU trainings. 34.40% of them stated that they participated in these trainings in medical school while 18.80% of them stated that they participated in trainings organised by Ministry of Health (Table 2). These percentages represent quite poor participations to trainings. The reason for this poor rates seems to be the duration of 11-15 years of experience of doctors on profession since the educations on problem based pharmacotherapy in medical schools is not long standing (4).

The results of the declaration of adverse effects is one of the striking points. 35.9% of doctors (n:23) indicated that they reported adverse effects, among them 28.1% (n:18) stated that they reported 1 or 2 adverse effect declaration. We regard these percentages as low rates considering the duration of professional experience of doctors. The safety of patients is one of the current and significant issues in order to improve the quality of healthcare. It is reported that patients get harmed due to preventable faults which are habitually repeated (5). It is important to make corporate declarations of adverse effects and constitute declaration systems. However, it is observed that declarations of faults are insufficient in health institutions and there is a resistance among health workers to report the faults. The reluctancy of health workers, especially doctors, to report medical faults demonstrates that declaration systems do not work properly (6).

All the health workers need to get information about patients safety, medical faults and declaration systems. In addition, the managers of the institutions have signigicant responsibilities to organise and operate the system (7). In this study, 25% , 17.2% and 14.1% of doctors mentioned that they have high information on indications, posology and use of drugs in special conditions, respectively. 42.2% and 45.2% of doctors mentioned that they have moderate information on adverse effects and drug interactions, respectively (Figure 1). In terms of RDU, to have moderate information on adverse effects and drug interactions reflects a low level of information. Doctors should not only make physical examinations of patients and prescribe but also inform patients about toxic and adverse effects of drugs and drug interactions (8). This requires a high level of information on drugs that are prescribed by them. Our results obviously point out that doctors working in Educational Research Hospital should have in service trainings on RDU.

Our results on what kind of anamnesis information doctors collected from patients when prescribing shows that 45.3% questionized the use of other drugs while 35.9% paid attention on the age status of patients, and 34.4% of doctors always paid attention whether the patients had drug allergy or not (Figure 2). Akıcı et al. reported that 93.2% of doctors questionized the use of other drugs (1). This is a very high rate than the results of our study. However, they performed the study on general practitioners while we involved mostly specialists in our study. This different outcomes may result from the variation of working conditions between general practitioners and specialists, since specialist work in hospitals which may be considered as intense work places, relatively.

According to our results, 20.3%, 18.8%, 12.5% of doctors notified that they never informed the patients about drug or food interactions, mechanisms of action of drugs, warnings on the usage of drugs, respectively (Table 3). These results state that most of the doctors do not inform their patients about interactions. This kind of attitude should be corrected because it affects the bioavailability of drugs. Also, we determined that most of doctors never informed their patients about the cost of drugs they prescribed. The main factors that doctors consider when prescribing are safety, efficacy, tolerability and cost of drugs. The concept of the cost of drugs is associated with their total cost, not with their barkode prices. However, it is determined that most of doctors did not have information about the total cost of drugs they prescribed and accordingly did not consider this in the choice of drugs. In a Spanish study, it was reported that most of general practitioners did not have adequate information about the cost of drugs they prescribed (9,10).

In the second stage of our study, we assessed the attitudes of nurses on RDU. 68.2%, 64.9%, 45.3% of nurses were reported that they got information about the

drugs they administered from doctors and pharmacists, their colleagues, reference books on drugs, respectively. To get information from doctors and pharmacists leads to have limited information. We may suggest that nurses have limited information on drugs because best information should be obtained form source reference books. This lack of information may be eliminate by organising efficient in service trainings.

In this study, 53.4%, 49.3%, and 18.9% of nurses mentioned that they missed the administration of drugs, administered drugs on inaccurate schedule and administered drugs to wrong patients, respectively (Figur 3). These results are supported by the results of the studies conducted by Saygılı et al. and Oğuz et al. (11,12). In addition, this kind of faulty drug administrations were reported in other studies (13).

Figure 4 shows the level of information of nurses on drugs. According to this, nurses have low level of information about the pharmacological effects of drugs. The lack of information about the pharmacological effects of drugs may lead an increase in the faulty drug administrations. In a prospective study, Patel et al. reported a significant rate of faulty drug administations in hospital and suggested that all the health workers including supporting staff responsible for recording drugs on computer systems, prescribers and nurses (14).

CONCLUSION

Based on our findings, we suggest that in service trainings should be organised to increase the knowledge and correct the inaccurate attitudes of doctors and nurses on RDU who are working in a Educational Research Hospital in Central Anatolia. It will be useful to repeat this study after giving these trainings in order to observe the benefits and plan the contents of the trainings.

Acknowledgements: This study was supported by the Commission of Scientific Researchs Projects of Ahi Evran university. The authors declare that there is no conflict of interest.

References

1. Akıcı A, Uğurlu MÜ, Gönüllü N, Oktay Ş, Kalaça S. Pratisyen Hekimlerin Akılcı İlaç Kullanımı Konusunda Bilgi ve Tutumlarının Değerlendirilmesi. Sted 2002; 11(7): 256.
2. Şahingöz M, Balcı E. Rational Drug Use of Nurses. TAF Preventive Medicine Bulletin 2013; 12(1):57-64.
3. Turkey Medicines and Medical Devices Agency. Rational Drug Use. 2016; URL: http://www.akilciilac.gov.tr/?cat=38.
4. Aydın B, Gelal A. Akılcı İlaç Kullanımı: Yaygınlaştırılması ve Tıp Eğitiminin Rolü. DEÜ Tıp Fakültesi Dergisi 2005; 26(1):57-63.
5. World Health Organization(WHO). The Role of Reporting in Enhancing Patient Safety WHO Draft Guidelines for Adverse Event Reporting and Learning System from Information to Action. 1st ed. Geneva: WHO Press 2005; 12-5.
6. Lawton R, Parker D. Barriers to Incident Reporting in a Healthcare System. Quality and Safety in Health. Care 2002; 11-15.
7. İntepeler ŞS. Tıbbi Hatalar Ve Tıbbi Hata Bildirim Sistemleri. Anadolu Hemşirelik ve Sağlık Bilimleri Dergisi 2012; 15(2):129-35.
8. Aktay G, Hancı İH, Balseven A. İlaç Etkileşimleri ve Hekim Sorumluluğu. Sted 2003; 12(7): 261.
9. Wazana A, Primeau, F. Ethical Considerations in The Relationship Between Physicians and The Pharmaceutical Industry. Psychiatr Clin North Am 2002; 25: 647–663.
10. Özata M, Aslan Ş, Mete M. Rasyonel İlaç Kullanımının Hasta Güvenliğine Etkileri: Hekimlerin Rasyonel İlaç Kullanımına Etki Eden Faktörlerin Belirlenmesi. Selçuk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi 2008; 20: 529-542.
11. Saygılı M, Özer Ö, Uğurluoğlu Ö. Bir Kamu Hastanesinde Hemşirelerin Akılcı İlaç Kullanımına Yönelik Bilgi ve Davranışlarının Değerlendirilmesi. Dokuz Eylül Üniversitesi Hemşirelik Fakültesi Elektronik Dergisi 2015;8:3.
12. Oğuz E, Alaşehirli B, Demiryürek AT. Evaluation of the attitudes of the nurses related of the rational drug use in Gaziantep University Sahinbey Research and Practice Hospital in Turkey. Nurse Education Today 2015; 35:365-401.
13. Demirtaş E, Soylu M, Soylu M, Ödevci N. Akılcı ilaç uygulamalarında sağlık çalışanlarının farkındalık düzeyleri (uygulamalı bir örneği Yeşilyurt Hasan Çalık Devlet Hastanesi). IV. Uluslararası Sağlıkta Performans ve Kalite Kongresi; 2013 Mayıs 02-04. s.1-3.
14. Patel N, Desai M, Shah S, Patel P, Gandhi A. A Study of medication errors in a tertiary care hospital. Perspect Clin Res 2016; 7(4): 168-73