

REVIEW

The importance of “patient-nurse-physician-pharmacist” collaboration on drug administrations

Gülşah Köse¹, Ümran Subaşı², Sevgi Hatipoğlu¹, Hatice Lenk³, Engin Gönü'l²

ABSTRACT: The exact definition of the roles of the participants of the health team and their collaboration with each other and their patients leads to safe administration of medicine and ensures a high quality pharmaceutical care of the patients for it may reduce or prevent drug related adverse effects. Thus, it will enable a better therapeutic outcome of the treatment. In this review, the importance of collaboration between “patient-nurse-physician-pharmacist” is emphasized in regard with the Joint Commission International standards report third clause about drug safety. The current practice in Gulhane Military Medical Academy (GATA) Education and Research Hospital is also reviewed.

KEY WORDS: drug administration, nurse-physician-pharmacist, collaboration, rational drug use, drug administration, medication errors

INTRODUCTION

Team work of health professionals has a strategical importance in the health care system. It is well known that team work provides an extensive care to the patient and increases the success of the therapy. It is obvious that an effective team work will be provided by the presence of collaborative working, identification of the roles, good professional relationship and organisational supports (1).

One of the important duty of the health team is the drug safety. Safe and rational use of drugs will be implemented by an effective “patient-nurse-physician-pharmacist” collaboration (1,2). Thus a better therapeutic outcome will be achieved.

The most important responsibility of the nurse is the administration of the drugs to the patients. During this procedure, the nurse should be in collaboration with the prescriber who orders the drug for the patient and the pharmacist who provides the drug.

This collaboration among the health team occurs in various levels at different hospitals. There are specific administration rules for the drugs in the hospitals belonging to Turkish Armed Forces (TAF). Gulhane Military Medical Academy (GATA) Education and Research Hospital is one of the biggest hospitals belonging to TAF. The nurses supply drugs from the pharmacy, dispense and administrate the drugs to the patients in regard to these rules.

A. Safe drug administrations

World Health Organization (WHO) emphasizes the importance of communication between the patient, nurse, physician and pharmacist, and rational drug use on the safe administration of the drugs. WHO defines rational drug use as “patients receive medications appropriate to their clinical needs, in doses that meet their own individual requirements, for an adequate period of time, and at the lowest cost to them and their community” (2,3,4).

In order to define the medical treatment as safe, it is the responsibility of physician to choose the ap-

AFFILIATIONS

¹Gülhane Askeri Tıp Akademisi, Hemşirelik Yüksekokulu, Ankara, Türkiye

²Gülhane Askeri Tıp Akademisi, Beyin ve Sinir Cerrahisi Bilim Dalı, Ankara, Türkiye

³Gülhane Askeri Tıp Akademisi, Baş eczacılık, Ankara, Türkiye

CORRESPONDENCE

Gülşah Köse
E-mail:
glsh_ks@yahoo.com

Received:

27.02.2012

Revision:

30.03.2012

Accepted:

30.03.2012

ropriate drug (2, 5), while the pharmacists' responsibility is to dispense it and nurses administer these drugs to the patients according to the professional rules (2, 5, 6, 7). In order to perform this responsibility, it is necessary for the nurse to adapt the nursing procedure to the clinical application (6, 8).

The nurse play a critical role in the "patient-nurse-physician-pharmacist" collaboration because she/he is the most communicating person with the patient and the best observer. Giving information to the patient consists of information about the intended effect of the drug and how it works in the body. It also contains information about side effects, how a patient should take the drug, and cautions for its use, including warnings about allergies (2).

The WHO pointed out the importance of advanced communication between the nurse, patient, physician and pharmacist for the drug administration. Effective communication between these and their acts in terms of rational drug use will increase patient compliance. From the diagnosis to the prescription, from patient education to follow up, every component of the process has the potential to affect the compliance. As the nurse is generally in more relation with the patient, the role of the nurse in informing correctly and adequately, in identifying and solving the compliance problems and providing the necessary advices is essential to improve the compliance. It should be emphasized that there is a positive relationship between the compliance and the rational use of drugs (4,9).

Joint Commission International (JCI) developed standards for safety patient care and the 3rd clause of these standards is "*improve the safety of high-alert medications*" (10). The drug team should aim this goal for the patient.

The drug team consisted of "Patient-nurse-physician-pharmacist" is the main participants of effective drug use. The principle of effective drug use policy is based on rational, appropriate and safe drug use (4). In the challenging health care system, it is crucial to describe the responsibilities of the team members and to share the knowledge related to the drugs for an adequate patient care and better outcome.

During this process, nurses are responsible for dispensing and recording of drugs and monitoring the patients. The nurses should have sufficient information about the drug, and prognosis of the medical treatment (6, 8).

B. The errors during drug administrations

Some problems, which are encountered during the drug administration, have gained more importance recently. Research in dispensing process has increased.

The errors related to the drug administration are one of most important errors among all medical errors since there is excessive drug use for especially inpatients and the procedures for drug prescription and administration are getting more complicated day by day. (2, 9, 11, 12). According to the studies which were performed in the many hospitals around the world, the rate of drug administration errors is 6.7 per cent (11, 12).

Drug administration errors may be classified as: inappropriate drug preparation technique, wrong administration route, wrong drug administration time, wrong dose, the administration of an

unprescribed drug, administration of wrong drug, simultaneous administration of interacting drugs and missing records.

B.1. The difficulties during the preparation and administration of the drugs

Another important step of the patient treatment after the supplying the drug is the preparation and administration of the drugs (8).

Patient Safety goals, which were prepared by the Joint Commission International (JCI), emphasize the importance of this issue and provide specific informations and principles for patient safety. JCI stated that these goals are related to the safety and quality of the patient's care and the determination of the situations which may cause risks and harm the patient. It is also pointed out the importance of re-organization of health care system to increase the patient's care by focusing on this issue (10, 13).

The headlines of success principles on patient's safety determined by JCI in 2008;

- ✓ The correct identification of the patient,
- ✓ Developing an effective communication,
- ✓ Improve the safety of high-risk treatments,
- ✓ Be sure of right place, right procedure and right patient,
- ✓ Reducing the risks of health care related infections
- ✓ Reducing the risk of patient's injury caused by the inappropriate treatment (10,13)

All the rules for safe drug administration emphasize on the issue that the drugs should be administrated after re-checking the patient's name, physician's order and drug's name. However, usually the drugs are prepared in the morning after the physician visits and administrated to the patient according to the ordered intervals at different time points. The drug administration errors occur in case the safe drug administration strategies of JCI are not obeyed in routine clinical practice.

It has been shown that the drug administration errors usually occur at 7-8 am because it is the time for shift change in many hospitals and the busy period for them (14). These errors may also occur because of the similarity of drugs in color, appearance or package styles (15).

Another problem is the underreporting of adverse drug reactions by health professionals (i.e. nurse for the inpatients and pharmacists for the outpatients) (16, 17). In a paper published by Lata et., it has been shown that there is a increase in the studies focused on drug side effects after 2000, and the rate of side effect is claimed to be 81%. It is also stated that 62% of these were caused by the nurses, 17% by the pharmacists and 2% by the social workers (12).

While et al., performed a study on pharmacist-nurse collaboration and they reported that there is an increase of adverse drug reaction reporting after a short training on nurse-pharmacist collaboration. It is also pointed out that side effects of the drugs could be diminished by the improving of patient's and relatives' knowledge on the drugs and by the preparation of appropriate discharge plans (1).

B.2.Oral orders by prescribers

The JCI guide on patient's safety consists of principles as "do not receive orders from the physician by phone or oral communication". On the other hand, oral or phone orders from the physicians are received in many hospitals and these orders are not recorded. This fact hinders the observation of patients' clinical prognose and the effects of the drugs. As a result, the patient may be harmed (10). Therefore, international patient's safety measures should be obeyed, and oral or phone orders should be rapidly recorded and transformed to written physician order.

C. The role of the nurses on drug administration in Turkish Armed Forces's Hospitals

There are specific forms for physician orders in every hospitals. This form is a part of patient's records (18-21). In GATA Training and Education Hospital, K-charts and clinical patient's prescriptions are used for the supply of the drugs which are prescribed by the physicians. Drug services directive [MY 435 6(A)] is applied for the drug supply by K-chart. According to this directive, the drugs, which are prescribed by the physician, should be provided from the hospital's pharmacy by daily dose. During the supply by K-chart, the drugs are recorded to the computer (Military Health Automation System) and when the request is terminated this page is approved by the nurse. After the approval of the physician and nurse, the request page is appeared on the computer of pharmacist and after the approval of the pharmacist the drugs are delivered to clinic nurses.

The drugs, which are not supplied from the hospital pharmacy, are bought from the community pharmacies which have a protocol with the hospital. These drugs are received by the hospital's pharmacy and at the end of day, these drugs are delivered to the clinic's nurses and then dispensed to the patients.

There is a directive, which is prepared by GATA, for the control and prevention of misuse of the drugs which are prescribed by red, green, orange and purple prescriptions. Red and green prescriptions are used for psychotropic drugs whereas purple or orange prescriptions are for blood products. This directive is applied in all military hospitals belonging to TAF. According to this directive, the prescription is received from the responsible physician, delivered to the pharmacy by the clinical nurse after the approval of the chief resident and this prescription is recorded to the clinic's "notebook of narcotics and blood products" (21).

D. The team work and collaboration among the health care personal

One of the basic rule to offer qualified health care is the presence of specialized health professionals and the other rule is the effective communication between them (22).

The team work has an important place to offer the primary health care. For an effective team work, the necessity of collaboration between the professionals, the specification of the roles and the organizational support is required.

The health team is described as a "union composed of 2 or more professionals (physician, nurse, pharmacist, dietician etc) who work in collaboration and give qualified and comprehensive health care in regard to the patient's individual needs,

and thus they perform decision making in concensus and in coordination" (22).

In an editorial which is published in American Health System Pharmacists Association's journal, the importance of synergistic collaboration between the pharmacists and nurses for a severe development on the drug safety is pointed out. The development of drug systems based on communication technologies, which integrate the experiences of physician, nurse and pharmacist in a synergistic fashion, and the share of information among the health care professionals related to drugs are important to reach the outcomes of health care for patients (6).

Despite the importance of communication between the patient, nurse, pharmacist and physician for drug safety is repeatedly emphasized, it is observed that the actual communication is not sufficient during dispensing and administration of the drugs. Two studies in Turkey have shown that prescribers and pharmacists poorly informed patients about their medication (23, 24).

Not only at the prescription phase, but also at the supply and administration phases, there is no connection with pharmacist and pharmacist is not consulted for the appropriate drug and dose. The physician prescribes the drug and the nurse administers it. During this process, not only the communication with pharmacist, but also the communication with the patient is not sufficient. Therefore, the effects of the drug are not adequately observed. This situation occurred because the principles of JCI on safe drug administration and patient safety are not appropriately applied (10). In these principles, the importance of communication with pharmacist is pointed out for a quality patient's care and low injury risk for the patient during the process of drug prescription and administration. By this communication, the patient's clinical prognose could be carefully observed and the changes in medical treatment could be more safely by decreasing the risk of harm to the patient (8,10).

In a study on the collaboration of nurses and pharmacists, the pharmacists stated that the nurses are not adequately and regularly communicated them about medicine. In the same study, it is reported that a few pharmacist and nurse consulted about how to administer the drug. This lack of communication between the nurse and pharmacist hinders the team work and thus, negatively effect the patient's treatment. A good nurse-pharmacist collaboration increases pharmaceutical care of the patients and decrease of drug medication errors (1). Other studies have also shown that rational pharmacotherapy training improved dispensing behaviour of the pharmacists (25).

E. Suggestions for collaboration and team work

Two issues are pointed out for the solution of the problems related to communication:

- Nurse, physician and pharmacist should be sincere on the declaration of drug's side effects.
- Hospital's protocols should be constituted by clinic head nurses, chief residents, physicians and pharmacists.

Advers drug reaction reporting forms should be available on nurses desks in each unit and nurses should be aware of the national pharmacovigilance system (12).

Another option for this issue is to nominate a clinical pharmacist staff which is a widely used solution in many hospitals worldwide. This system enables a better therapeutic outcome.

CONCLUSION

Continuous communication and back-up among "patient-nurse-physician and pharmacist" are necessary during the process initiating with prescription/order of the medicine to the endpoint which is the monitoring. The communication between the physician, pharmacist and patient during dispensing procedure and the evaluation of side effects, will decrease the errors.

A communication on the basis of collaboration may decrease or prevent medication errors and improve therapeutic outcome.

Clinical nurses should be informed about the drugs which are administered to the patients and they should create protocols for these drugs. This is an important step for the nurses.

According to the recent studies, drug administration errors could not be completely prevented, but may be decreased by procedures described by JCI in clinics (10,14,15).

İlaç uygulamalarında "hasta-hemşire-doktor-eczacı" işbirliğinin önemi

ÖZET: Hasta bakımının istenilen düzeyde uygulanabilmesi, ilaç uygulamalarında güvenliğin ve kalitenin sağlanması, ilaçlara ilişkin yan etkilerin önlenebilmesi veya tedavi edilebilmesi için hasta-hemşire-doktor-eczacıların sorumluluklarının tanımlanması ve kullanılan ilaçlara ilişkin bilgi paylaşımı kritik bir önem arz etmektedir. Bu derlemede Uluslararası Birleşik Komisyon'un standartlar raporunun üçüncü maddesinde yer alan ilaç güvenliliğinin Gülhane Askeri Tıp Akademisi (GATA) Eğitim ve Araştırma Hastanesi'nde nasıl gerçekleştirildiğinin anlatılması ve bu alanda hasta- hemşire- doktor- eczacı işbirliğinin önemini vurgulanması amaçlanmıştır.

ANAHTAR SÖZCÜKLER: ilaç uygulamaları, hemşire-doktor-eczacı işbirliği, akılçi ilaç kullanımı, ilaç uygulaması, ilaç hataları

REFERENCES

1. While A, Shah R, Nathan A. Interdisciplinary working between community pharmacists and community nurses: The views of community pharmacists, Journal of Interprofessional Care, 2005; 19:164-70
2. Özer E, Ozdemir L. Yaşılı bireyde akılçi ilaç kullanımı ve hemşirenin sorumlulukları. Hacettepe Üniversitesi Sağlık Bilimleri Fakültesi Hemşirelik Dergisi 2009; 16:42-51.
3. Akılçi ilaç kullanımı. www.saglik.gov.tr/TR/belge/1-7771/akilci-ilac-kullanimi. [Erişim Tarihi 20.08.2011]
4. Toklu HZ, Dülger GA. Akılçi ilaç kullanımı ve eczacının rolü. [Rational drug use and the role of the pharmacist]. Marmara Pharm J 2011; 15:89-93.
5. Özdemir L, Akdemir N. Yaşılı bireyde hemşirelik değerlendirmesi ve bakım uygulamaları. Editör: Arıoglu S. Geriatri ve Gerontoloji. Medikal&Nobel Tıp Kitabevi, Ankara, 2006, s: 161-181.
6. Vural H, Uçar H. İlaç uygulamalarına ilişkin geliştirilen işlemin ilaç uygulama hataları üzerine etkisi. Gülhane Tıp Dergisi 1999; 41:419-25.
7. Griffiths R, Johnson M, Piper M, Langdon R. A nursing intervention for the quality use of medicines by elderly community clients, Int J Nursing Practice 2004; 10: 166-76.
8. Erdil F. Yaşlıların ilaç kullanımında eczacı-hemşire işbirliğinin önemi. geriatri, yaşılı sağlığına multidisipliner yaklaşımı. Türk Eczacılar Birliği Eczacılık Akademisi Yayımları, Ankara 2009; 91-6.
9. Toklu HZ, Akıcı A, Keyer Uysal M, Dülger G. Akılçi ilaç Kullanımı Sürecinde Hasta Uyuncuna Hekim ve Eczacının Katkısı. [The role of the doctor and pharmacist in improving patient compliance in the process of rational drug use]. Aile Hekimliği, 2010; 14:139-145.
10. Hoesing H. Joint Commission International patient safety solutions. 4.th International Nursing Management Conference. October. Antalya, Turkey. 2008; p.11-44.
11. Aslan Ö, Ünal Ç. Cerrahi yoğun bakım ünitesinde parenteral ilaç uygulama hataları, Gülhane Tıp Dergisi 2005; 47:175-8.
12. Lata PF, Mainhardt M, Johnson CA. Impact of nurse case manager-pharmacist collaboration adverse-drug-event reporting, Am J Health Syst Pharm 2004; 61:483-7.
13. Joint Commission International (JCI) Consulting, International Essentials of Health Care Quality And Patient Safety, 2008
14. Gürbüz F, Gündoğdu Eİ. Effect of times of events on drug mistake, 4. th International nursing management conference. Toward a new world: challenges for nursing leadership, Antalya, 13-15 October, 2008.
15. Seren S., Madak K U, Erkoç D. Strategies to prevent drug confusion in a university hospital, 4 th International nursing management conference, Toward a new world: challenges for nursing leadership, Antalya, 13-15 October, 2008.
16. Hazell L, Shakir SA. Under-reporting of adverse drug reactions : a systematic review. Drug Saf 2006; 29: 385-96.
17. Toklu HZ, Uysal MK. The knowledge and attitude of the Turkish community pharmacists toward pharmacovigilance in the Kadıkoy district of Istanbul. Pharm World Sci 2008; 30: 556-62.
18. Ay FA. Temel hemşirelik: Kavramlar, ilkeler, uygulamalar. Medikal Yayıncılık, İstanbul, 2007

- 19.** Ulusoy F, Görgülü S. Hemşirelik esasları: Temel kuram, kavram, ilke ve yöntemler, Cilt 1, 5. Baskı. TDFO Ltd Şti. Ankara, 2001
- 20.** Türk Silahlı Kuvvetleri İlaç Hizmetleri Yönergesi, MY435 6(A) Genelkurmay Basımevi, Ankara, 1995.
- 21.** GATA Komutanlığı kırmızı, yeşil, mor reçete kullanım talimatı. GATA Basımevi Müdürlüğü, Ankara, 2003
- 22.** Ulusoy H, Tokgöz MD. Hekim ve hemşirelerin ekip çalışmasına ilişkin görüşleri, Pamukkale Tıp Dergisi 2009; 2:55-61.
- 23.** Akici A, Kalaca S, Uğurlu MU, Toklu HZ, Iskender E, Oktay S. Knowledge of patients about their prescribed drugs in primary healthcare facilities. Pharmacoeconomics Drug Saf 2004; 13:871-6.
- 24.** Toklu HZ, Akıcı A, Oktay S, Cali S, Sezen SF, Keyer Uysal M. The pharmacy practice of community pharmacists in Turkey. Marmara Pharm J 2010; 14: 53-60.
- 25.** Toklu HZ, Dulger G, Yaris E, Gumusel B, Akici A. First impressions from a short training course in rational use of drugs for the pharmacologists in the pharmacy schools in Turkey. Value in Health 2009; 12: A249