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RESEARCH ARTICLE

The Role of Community Pharmacists in Increasing Patients' Drug Compliance

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The Role of Community Pharmacists in Increasing Patients' Drug Compliance

SUMMARY

In this study, the importance of compliance to treatment for the patient to benefit from the treatment, and the effects of patient compliance were determined. The study is a decisive type of research. The forms with 5-point Likert-type questions created by the researchers were asked to community pharmacists via the Internet. 110 pharmacists from different parts of Turkey participated in the survey. The data obtained in the research were analyzed with the SPSS ver. 25.0 program. The significance level (α) was determined as 0.05 in the analyzes made in the study. The Cronbach-alpha reliability coefficient for the developed scale was found to be 0.847. In this study, it is found that community pharmacists make an effort to increase the drug compliance of patients. There was no significant difference between the age and professional experience of the pharmacist in improving patient compliance. Pharmacists need to work more systematically to improve patients' drug compliance. It is thought that the concept of drug compliance is frequently included in the education curriculum of Pharmacy Schools. Still, the necessary educational content and learning opportunities are not sufficient to increase it.

Keywords: *compliance, drug compliance, community pharmacy, pharmacist*

Hastaların İlaç Uyumunun Arttırılmasında Toplum Eczacılarının Rolü

ÖZ

Bu çalışmada, hastanın tedaviden yarar görmesi için tedaviye uyumunun önemi ve hasta uyumunun nelerden etkilendiği belirlenmiştir. Çalışma, betimleyici tiptedir. Araştırmacılar tarafından oluşturulan 5'li Likert tipi soruların bulunduğu formlar, anket tekniği ile toplum eczacılarına internet ortamında uygulanmıştır. Ankete Türkiye'nin farklı yerlerinden 110 eczacı katılmıştır. Araştırmada elde edilen veriler SPSS ver. 25.0 programı kullanılarak analiz edilmiştir. Araştırmada yapılan analizlerde anlamlılık düzeyi (α) 0,05 olarak belirlenmiştir. Geliştirilen ölçek için Cronbach-alpha güvenirlik katsayısı 0,847 olarak bulunmuştur. Bu çalışmada, toplum eczacılarının hastaların ilaç uyumunu artırmak için çaba sarf ettikleri görülmektedir. Hasta uyumunu arttırmada eczacının yaş ve mesleki deneyimi arasında anlamlı bir fark görülmemiştir. Eczacıların hastaların ilaç uyumunu artırmak için daha sistemli çalışması gerekmektedir. Eczacılık Fakültesi eğitim müfredatında ilaç uyumu kavramının sıklıkla yer aldığı ancak arttırmak için gerekli eğitim içeriği ve öğrenme fırsatlarının yeterli olmadığı düşünülmektedir.

Anahtar Kelimeler: *uyum, ilaç uyumu, toplum eczacılığı, eczacı*

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INTRODUCTION

The patient's compliance with medication is following the instructions regarding the treatment and taking an active role in this process. Compliance ensures that the patient obtains optimum benefit from drug therapy. Lack of compliance leads to negativities in the treatment process. From diagnosis to prescribing, from patient education to monitoring, every step of the process affects compliance. From the beginning of the treatment, the last contact of the patient is often the pharmacist. It is thought that compliance will increase if the pharmacist informs the patient correctly and adequately, determines and resolves the problems, and makes necessary suggestions (Toklu, 2010).

Patient compliance is the patient's ownership and maintenance of treatment. In history, Hippocrates (400 BC) was the first to notice that some patients were not taking their prescribed medication and later complained that the treatment was not working. Then in 1882, for the first time in modern medicine, Robert Koch referred to noncompliant patients with tuberculosis, the term patient non-compliance was coined in the 1970s to analyze why people did not comply with medical directives (Vrijens, 2012). Patient non-compliance was defined as "the extent to which an individual's behavior (in terms of taking medication, following diets, or implementing lifestyle changes) does not align with medical or health advice" (Ulmer, 1976). Before 1980, when the medical mandate was expanded, and physician authority increased, patient compliance was seen as a tool for understanding when and why medical efforts failed (Spencer, 2018).

Patient compliance has clinical and economic importance. Irregular, under, or excessive drug consumption will affect the economy and the clinic of the patient. Some drugs should be taken long after symptoms have disappeared, some drugs are dangerous when taken in excess, and many are ineffective unless certain critical medication levels are taken. Thus, it is well known that patient compliance with medication and other treatment regimens can have a profound effect on outcomes. Compliance and persistence affect treatment efficacy, treatment costs, adverse event rates, disease-related sequelae rates and severity, general health, and quality of life (Kadambi, 2012).

In this study, the importance of compliance to treatment for the patient to benefit from the treatment, and the effects of patient compliance were determined.

MATERIALS AND METHODS

This study is a decisive type of research. The forms with 5-point Likert-type questions created by the researchers were asked to community pharmacists via the Internet. A convenience sampling method was used.

One of the variables that are frequently tried to be measured in educational research is attitude. Attitude has been defined as a 'learned tendency to react positively or negatively to a particular object, situation, institution, concept or another person.' The most widely used one to measure the attitudes, tendencies, and views of individuals and groups is the Likert scale, which was developed as a simplified version of the Thurstone scale (Willoughby,1932).

The sample size of 26,748 pharmacies in Turkey was determined as 96 with a sampling error of 0.10 and a probability of occurrence of 0.5 (Çalıkuşu, 2021; Büyüköztürk, 2019). Expert opinion was taken about the questions prepared for the questionnaire, and a preliminary application was made. Ethical approval was obtained for the survey study with the decision of Ankara University Rectorate Ethics Committee dated 12.04 2021 and numbered 60.

RESULTS

Pharmacists also need to play a role in ensuring patient compliance. The results of the survey conducted to determine what community pharmacists do to increase patient compliance and

how much they care about this issue are given in the tables below. 110 pharmacists from different parts of Turkey participated in the survey. The data obtained in the research were analyzed with the SPSS ver. 25.0 program. The significance level (α) was determined as 0.05 in the analyzes made in the study. The Cronbach-alpha reliability coefficient for the developed scale was found to be 0.847. General information about the participants is given in Table 1.

Table 1. General Information About the Participants

Age	**Frequency**	**Percent**
30 and below	43	39.1
31-40	23	20.9
41-50	15	13.6
50 and above	29	26.4
Professional Experience (Year)		
10 and below	60	54.5
11-20	18	16.4
21-30	12	10.9
30 and above	20	18.2
Total	**110**	

The average age of the pharmacists participating in the survey is 39 years, and the average time spent by community pharmacies is 14 years. The highest participation in the study was from the age group of 30 and below; the lowest participation was from the age group of 41-50. In terms of professional experience, the highest participation was found at 54.5% with 10 and below, and the lowest was 10.9% with 21-30 years. In Table 2, the results of the participants' attitudes towards increasing drug compliance are given.

Table 2. Results on the Attitudes of Community Pharmacists Towards Improving Patient Compliance with Medication

	Average	Standard Deviation
1) I provide education about the disease and medication to increase the patient's commitment to treatment.	4.02	1.031
2) To increase the commitment of my patients to treatment, I contact their physicians.	3.30	1.216
3) I test whether my patients use their previous medications properly.	4.06	0.989
4) I examine the reasons for my patients who do not use their medications correctly.	3.93	1.055
5) I give written information notes to my patients as well as verbal information about their medications.	4.08	1.142
6) I test patients' understanding of what I tell them about their medication by asking questions.	4.08	1.033
7) I want my patients to inform me from time to time about the use of their medications.	3.45	1.224
8) I congratulate and reward my patients who use their medicines rationally.	2.14	1.208
9) I monitor my patients in their drug use processes.	3.34	1.191
10) I care that the patient is satisfied with the service I provide.	4.68	0.676
11) I create opportunities for my patients to reach me quickly.	4.60	0.780
12) I think a mobile application where my patients will always reach me would be beneficial.	3.58	1.480
13) I discuss the treatment results of my patients' medications with them.	3.83	1.108
14) I stay in contact with my patients more when using multiple drugs.	3.75	1.127
15) My one-to-one care with the patient increases the patient's drug compliance.	4.66	0.707

Analysis of Variance (ANOVA) test was applied to analyze the pharmacists' responses to improve patient drug compliance in treatment. The test results are shown in Table 3.

Table 3. ANOVA Test Results

Age Groups	N	Average Score	Standard Deviation	Sig. (2-tailed)
30 and below	43	59.1628	6.88660	0.001*
31-40	23	50.5652	10.21063	
41-50	15	59.8000	9.20559	
50 and above	29	59.3793	9.09636	
Professional Experience by year				
10 and below	60	55.7833	9.34479	0.180
11-20	18	59.7222	7.27450	
21-30	12	60.5000	7.97154	
30 and above	20	58.9000	10.34103	
Total	**110**			

According to the ANOVA test results;

- ✓ While there is no significant difference between professional experience by years, a significant difference ($p<0.05$) was found between age groups.
- ✓ It has been determined that pharmacists in the age group of 30 and below, 41-50, and 50 and above try to significantly increase the patient's drug compliance in treatment compared to pharmacists in the age group of 31-40.

DISCUSSION

In different languages, terms such as commitment, compliance, and cooperation are used instead of 'patient compliance'. Definitions include terms that can mean obedience or shelve collaboration with the patient. In this study, the word 'compliance' is based.

The patient's non-compliance with drug use is significant as it affects the patient's quality of life, the clinic of the disease, and the economy (Nasseh, 2012). In addition, it is thought that pharmacists have a great responsibility to increase the drug compliance of the patients. They have competencies related to rational drug use in the national core education program. There are also many studies on the pharmacist's role in rational drug use (Toklu, 2015; Pehlivanlı, 2021; Khalil, 2021).

74.6% of the pharmacists who participated in the survey stated that they gave information to the patient about medicine and disease. In the studies conducted, it was determined that patient compliance increased when the pharmacist gave information to the patients (Goggin, 2010; Jimmy, 2011; Darbishire, 2018). It can be said that the attitudes of most pharmacists in Turkey in providing education to patients about their medicines have a positive effect on patient compliance. 71.8% of the pharmacists stated that they gave written information notes to their patients along with verbal information about their drugs, and 75.4% even indicated that they tested their patients' understanding of the drugs. Underneath this, it means that community pharmacists are willing to provide education to their patients, and there is no doubt that compliance will increase with the teaching of patients (López Cabezas, 2006). In particular, pharmacists or clinical pharmacists who have gained competence in patient compliance during their undergraduate education will have an essential role in increasing patient compliance (Savaş, 2020).

44.5% of community pharmacists said they monitor their patients' drug use processes. 63.6% of the pharmacists indicated that they provided the opportunity to discuss the treatment results with the patient. Thus, patient participation can also

be provided. In community pharmacies, 90.9% of pharmacists state that one-to-one care with patients increases their drug compliance, prevents recurrence of hospitalizations, and provides economic savings (López Cabezas, 2006). Some studies show that patients experience severe illnesses and hospitalizations again, as well as financial losses because they do not take their medications as prescribed (Giannetti, 2016; Su, 2019; Sokol, 2005; Colom, 2003; Fallowfield, 2009; Hughes, 2007).

In our study, 40.9% of community pharmacists contact patients' physicians only to increase patient compliance. Studies are emphasizing the importance of physician-pharmacist collaboration to improve patient compliance (Krummenacher, 2011). Factors affecting patient compliance have been determined such as socioeconomic factors, factors related to the healthcare team and the system, factors related to the situation, factors related to treatment, and patient-related factors (Kardas, 2013).

69.1% of pharmacists are analyzing the reason for this behavior in patients who do not use their medicines correctly. This approach will improve the factors affecting patient compliance. It will raise the awareness of the pharmacist to increase patient compliance. 49.1% of community pharmacists participating in the survey stated that they want their patients to inform them about the use of their medicines from time to time. It is thought that patient follow-up by the pharmacist is an attitude that will increase patient compliance (Jimmy, 2011).

12.8% of pharmacists stated that they congratulated and rewarded their patients who used compatible and rational drugs. There are studies stating that motivational interviews increase patient motivation and increase the permanence of compliance (Krummenacher, 2011). To improve this rate, it would be beneficial for the pharmacist to give importance to motivational interviews.

Almost all community pharmacists (94.6%) care about the patients' satisfaction with the service they provide. 90% of pharmacists stated that communication tools such as the telephone provide convenience for the patient to reach them. In addition, only 55.4% of pharmacists believe that patients can get them more easily through a mobile application. From this point of view, community pharmacists are people who are easily called by patients most of the time.

One of the reasons for the patient's noncompliance with treatment is the use of multiple drugs (Kardas, 2013). According to the survey results, 60% of the community pharmacists stated that they spend more time with their patients who use multiple drugs.

With the development of technology, different suggestions and measures are also emerging. Used by pharmacists and physicians in the US, the DirectRx program develops plans, programs, and software designed to track and improve patients' compliance rates while motivating patients' results to provide feedback to their physicians and pharmacists. These systems continuously monitor compliance and permanence, resulting in better outcomes, enabling early detection of compliance problems and appropriate intervention (DirectRx Pharmacy, 2020).

Patient compliance does not depend only on the pharmacist, it occurs with many factors. The physicians also have responsibilities. It is crucial to apply the drug supply process recommended by the World Health Organization (Toklu, 2015).

As a result, high patient compliance increases the quality of life, prolongs the lifetime, and provides financial savings to the health system. To improve patient compliance, the pharmacist should be in effective communication with the patient, provide information about patients' drugs within the framework of the principles of rational drug use, test that the information is understood by the patient, and permanent with small information notes or labels to be attached on the drug box, if necessary, and areas, where the patient can easily reach the pharmacist should be created.

In this study, it is seen that community pharmacists make an effort to increase the drug compliance of patients. There was no significant difference between the age and professional experience of the pharmacist in improving patient compliance. However, pharmacists need to work more systematically to improve patients' drug compliance. It is thought that the concept of drug compliance is frequently included in the education curriculum of Pharmacy Schools. Still, the necessary educational content and learning opportunities are not sufficient to increase it. Motivational interviewing, which is especially important in the literature, can be included in the Pharmacy Schools' curriculum. Thus, drug compliance can be achieved by increasing patient motivation.

CONFLICT OF INTEREST

All the authors of this article declared no conflict of interest.

AUTHOR CONTRIBUTION STATEMENT

Data collecting, experimenting, data analysis and interpretation (FÇ). Research concept and design, data, data analysis, and interpretation, manuscript draft, final approval (MÇ). Research concept and design, data, data analysis, and interpretation, final approval (GÖ).

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