

# Health Information Systems, the Use of Electronic Recipe and the Attitude of Healthcare Professionals <sup>†</sup>

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**Abstract:** Developments in information technology rapidly affect every sector, including the health sector. All of the technology-based applications that occur as a result of technological developments in the health sector are called e-health. E-prescription application is one of the important e-health applications. In the study, the perspectives of health professionals against e-prescription application were examined.

**Keywords:** digital transformation in health; health industry; health workers; health management

## 1. Objectives

Technology has facilitated fast, timely, and accurate decision making in institutions. This situation is not different in the health sector [1]. Technological applications in the field of health are gathered under the title of e-health. Some e-health concepts in our country are web-enabled transactions, advanced network and information systems, family medicine information systems, central patient appointment systems, telemedicine, e-pulse, e-prescription systems, etc. [2–4]. The e-prescription application is one of the important applications. With e-prescription, written data can be written, stored, and transferred electronically [5].

The e-prescription system has many advantages. Preventing disruptions in prescriptions, making prescriptions accessible electronically, being fast, and preventing unnecessary drug waste are just a few of them. However, it is difficult for people to abandon the order they are used to, and health professionals also defend this situation. Therefore, in this study, it is aimed to measure how e-prescription applications are evaluated in terms of healthcare professionals. Did the healthcare professionals find the e-prescription application facilitating? According to healthcare professionals, did e-prescriptions prevent waste? According to healthcare professionals, did e-prescription increase service quality?

In order to find the answers to these questions, we conducted a study with the health workers in a state hospital in Turkey.

## 2. Methodology

In this study, a literature review was conducted on the use of electronic prescriptions both in our country and in the world. A survey was conducted with 368 healthcare professionals working in the field of surgery at X state hospital in Turkey with a simple sampling method. The questionnaire used was developed by Aslan in 2014 [6]. The answers to the survey questions were arranged according to the seven-point likert system. While testing the results, answers of 1: strongly disagree, 2: disagree, and 3: somewhat disagree



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were accepted as “no”. Answers of 4: somewhat agree, 5: agree, and 6: strongly agree were accepted as “yes”.

Data were analyzed with a one-way ANOVA and T-test. In the factor analysis, it was determined that the scale had 7 subdimensions. Two of them divided the ease of using e-prescriptions into two subheadings. These are as follows:

1. learning and convenience.
2. business convenience.

The sum of these two subheadings was evaluated as perceived ease of use. The study also analyzed the difference in perceived ease of use in terms of sociodemographic variables.

The third subdimension of the scale measured information and system quality. These two quality types, which are close to each other but different, were handled as two separate dimensions. System quality was seen as conformity to the desired information technologies for the respondents. Information quality was associated with other features, such as speed. These two dimensions were interpreted regarding the perceived usefulness and intention to use the e-prescription system.

### 3. Results

As a result, it was seen that physicians’ perspectives on e-prescription were positive. This shows that physicians running e-prescription, which is an integrated version of the developments in technology in the health industry, give satisfactory results. The results of the study are as follows:

A total of 45.2% of the respondents are women, and 67.16% are married. A total of 72.39% of the participants stated that e-prescription increased their speed, and 80.97% of them stated that they gave accurate information about patients and drugs. A total of 80.23% of employees stated that it reduces errors compared to paper prescriptions. A total of 82.09% of the employees stated that they could follow the drugs more easily, and 71.64% of them stated that they had no problems with the e-prescription system. According to 69.41% of employees, e-prescription improves performance. According to 78.35% of employees, the e-prescription system makes transactions more accurate. A total of 88.06% of the participants have a positive view of the e-prescription system.

### 4. Implications

The proportion of physicians who favor using e-prescriptions is higher than those who do not. As a result, it can be shown that physicians are intertwined with technology. Thanks to e-prescription, physicians’ work becomes easier, and they can examine more patients. The vast majority of physicians think that the use of e-prescription prevents drug theft, excessive drug use, etc. The use of e-prescriptions prevents waste of paper.

According to the results of the research, it has been determined that healthcare professionals have similar attitudes towards e-prescription. The fact that most healthcare professionals are in favor of using e-prescriptions shows that they are satisfied with the technological developments in the field of health when they follow the advances in technology.

### 5. Originality Value

Thanks to informatics in health, physicians can make a correct diagnosis and make it easier to diagnose. Patients began to be served faster. The quality of service to patients has increased. E-prescription is a development within the scope of informatics in health.

In this study, how e-prescription, which is one of the applications of informatics in health, is evaluated by physicians is discussed. It was conducted to determine whether e-prescription provides ease of work for physicians, whether it increases the work performance of physicians, whether the physicians fulfill their duties faster thanks to e-prescription, whether e-prescription prevents the waste of paper, and the quality of e-prescription. Thanks to e-prescription, the service provided to patients is increasing.

## 6. Contribution

In this study, how e-prescription, which is one of the applications of informatics in health, is evaluated by physicians is discussed. It was conducted to determine whether e-prescription provides ease of work for physicians, whether it increases the work performance of physicians, whether the physicians fulfill their duties faster thanks to e-prescription, whether e-prescription prevents the waste of paper, and the quality of e-prescription. Thanks to e-prescription, the service provided to patients is increasing.

Developments in information technologies continue to increase day by day. The reflections of the developments in information technologies are also seen in the field of health. First of all, those working in the field of health have adopted health informatics over time as a result of the benefits provided by technology, although they resisted the developments in health informatics.

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## References

1. Küzeci, E. Sağlık Bilişim Teknolojileri ve Yeni Hukuksal Soru (N) Lar. *Inonu Univ. Law Rev.* **2018**, *9*, 477–506. (In Turkish) [[CrossRef](#)]
2. Lippeveld, T.; Sauerborn, R.; Bodart, C.; World Health Organization. *Design and Implementation of Health Information Systems*; World Health Organization: Geneva, Switzerland, 2000; pp. 15–32.
3. Garrib, A.; Stoops, N.; McKenzie, A.; Dlamini, L.; Govender, T.; Rohde, D.; Herbst, K. An evaluation of the district health information system in rural South Africa. *S. Afr. Med. J.* **2008**, *98*, 549–552.
4. Özata, M. Sağlık Bakanlığı Ve Sosyal Güvenlik Kurumu Tarafından Yürütülen E-Sağlık Projelerinin Sağlık Hizmeti Sunumuna Etkileri. *J. Azerbaijani Stud.* **2009**, *12*, 444–464. (In Turkish)
5. Gider, Ö.; Ocak, S.; Top, M. Sağlık Hizmetlerinde Elektronik Reçete E Reçete Uygulamasının Değerlendirilmesine Yönelik Bir Araştırma. *Bilgi Ekon. Ve Yönetimi Dergisi.* **2015**, *10*, 15–25.
6. Aslan, İ. Türk Sağlık Sisteminde Bilgi Teknolojilerinin Etkisi: E-Reçete Örnek Çalışması. Ph.D. Thesis, Atatürk Üniversitesi, Erzurum, Turkey, 2014. (In Turkish)

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