

Relationship Between E-Prescription System Implementation Toward Pharmacy Service User Satisfaction at Labuang Baji Regional Hospital, Makassar

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ABSTRACT

Optimal pharmaceutical services are a vital component of healthcare in hospitals. The transition from manual prescription systems to E-prescription systems is expected to increase efficiency, reduce prescription errors, and increase consumer satisfaction. RSUD Labuang Baji has implemented the E-prescription system since January 2023. Prescription errors, whether in diagnosis or medication, can lead to adverse effects and pose potentially fatal risks to a patient's condition (Mursyid, 2023). This study aims to analyze the relationship between the implementation of the E-prescription system based on drug prescription and consumer satisfaction with pharmaceutical services at RSUD Labuang Baji Makassar. The research design is descriptive-analytic with a quantitative approach. Data were collected through questionnaires distributed to 96 outpatient respondents. Data analysis was performed using the chi-square method to evaluate the relationship between the implementation of e-prescriptions based on drug prescriptions and consumer satisfaction. The chi-square analysis results, processed using SPSS 27.0 for Windows with a significance level of p-value 0.05 or with a 95% confidence level, showed a significant relationship between fast drug waiting time and consumer satisfaction (p-value = 0.021). However, there was no significant relationship between prescription accuracy and consumer satisfaction (p-value = 0.315). The implementation of the E-prescription system at RSUD Labuang Baji Makassar has had a positive impact on consumer satisfaction with pharmaceutical services, particularly in reducing drug waiting times, although prescription accuracy did not significantly affect patients satisfaction.

Keywords: E-Prescription, Satisfaction, pharmaceutical services

INTRODUCTION

Pharmaceutical services are an integral part of health services in hospitals that aim to improve patient safety and satisfaction. The implementation of the E-prescription system (e-prescribing) is one of the important

innovations in pharmaceutical services that aims to increase efficiency, reduce prescribing errors, and speed up drug waiting times (Farida, 2017; Bulut, 2019; Roumeliotis, 2019). RSUD Labuang Baji Makassar began implementing the E-

prescription system in January 2023. However, the effect of implementing this system on the satisfaction of pharmaceutical service users at the hospital has never been studied in depth (Indrasari et al., 2021).

This study aims to analyze the effect of the implementation of the E-prescription system on the satisfaction of pharmaceutical service users at RSUD Labuang Baji Makassar. Specifically, this study will evaluate the relationship between drug waiting time and the accuracy of drug prescription with the level of service user satisfaction (Farida, 2017).

This research is expected to contribute in several aspects, namely, in the theoretical aspect where this article can add insight and knowledge about the influence of the E-prescription system on the satisfaction of pharmaceutical service users. In the practical aspect where this article provides useful information for hospitals in improving the quality of pharmaceutical services and patient satisfaction. In the policy aspect where this article is a reference for policy makers in implementing and evaluating the E-prescription system in other hospitals (Roumeliotis, 2019; Bulut, 2019; Indrasari et al., 2021).

MATERIALS & METHODS

This study uses a descriptive analytical design with a quantitative approach. This design was chosen to describe the phenomena that occur and analyze the

relationship between the independent variable (implementation of the E-prescription system) and the dependent variable (satisfaction of pharmaceutical service users). The sample of this study was outpatients at RSUD Labuang Baji Makassar who used the E-prescription service. The sample was taken using a purposive sampling technique with the inclusion criteria of patients who had used E-prescription for at least one month and were willing to be respondents. The number of samples used was 96 respondents.

STATISTICAL ANALYSIS

The analysis used in this study is univariate and bivariate analysis. Univariate is used to describe the characteristics of respondents and the frequency distribution of each variable. While bivariate analysis is used to test the relationship between the implementation of the E-prescription system and the satisfaction of pharmaceutical service users using the chi-square test with alfa 95%.

RESULT

1. Univariate analysis

a. Characteristics of research subjects

The results of the distribution of data on the characteristics of research subjects from respondents involved in this study are divided into 4 characteristics, namely based on gender, age, level of education, and type of work.

Table 1. Distribution of frequency data (n%) of Respondents' characteristics according to Gender, Age, Education and Occupation

Gender	Total (n=96)	Percentage (%)
Man	35	36.5
Woman	61	63.5
Age (Years)		
17-25	14	14.6
26-35	17	17.7
36-45	24	25.0
46-55	24	25.0
56-65	7	7.3
>65	10	10.4
Level of education		
SD	7	7.3
Junior High School	13	13.5
Senior High School	42	43.8

College	34	35.4
Occupation		
civil servant	5	5.2
Private sector employee	8	8.3
Businessman	17	17.7
Students/Students	12	12.5
Housewife	35	36.5
Etc	19	19.8

Based on table 1 above, it can be seen that 63.5% of respondents are female, while 36.5% are male. The largest age group of respondents is respondents with age groups between 36-45 and 46-55 years, which are 25% each. Respondents with the highest level of education are high school, which is 43.8%, while the lowest level of education is elementary school, which is 7.3%. The largest occupation of respondents is

housewife, which is 35.5%, while the lowest occupation of respondents is civil servant, which is 5.2%.

b. Implementation of E-prescription Based on Waiting Time

The table below illustrates the results of the implementation of E-prescription based on waiting time and suitability according to respondents.

Table 2. Implementation of E-prescription based on waiting time and suitability

Speed	Total (n=96)	Percentage (%)
Fast	82	85.4
Slow	14	14.6
Compliance		
In accordance	95	98.9
It is not in accordance with	1	1.1

Based on table 2 above, it can be seen that respondents who stated that e-prescription implementation was fast were 85.4%, while those who stated that electronic prescription services required a long waiting time were 14.6%. Respondents who stated that prescriptions were in accordance with electronic prescriptions were 98.9%, while those who stated that prescriptions were not

in accordance with e-prescriptions were 1.1%.

2. Bivariate analysis

a. Analysis of the relationship between waiting time and patient satisfaction levels

The table below illustrates the results of bivariate analysis using the chi-square method to see the relationship between waiting time and suitability to patient satisfaction levels.

Table 3. Relationship between waiting time and prescriptions and patient satisfaction

Variables	Satisfaction				Total		P value
	Satisfied		Not satisfied		n	%	
Waiting time	n	%	n	%	n	%	0.021
Fast	45	54.9	37	45.1	82	100.0	
Slow	3	21.4	11	78.6	14	100.0	
Prescription Suitability							
In accordance	48	50.5	47	49.5	95	100.0	0.315
It is not in accordance with	0	0.0	1	100.0	1	100.0	

Based on table 3 above, it can be seen that 54.9% stated that they were fast and satisfied with the implementation of e-prescription. Meanwhile, respondents who stated that they

were fast but not satisfied were 45.1%. Respondents who stated that they were slow and satisfied with the implementation of e-were 21.4% and those who stated that they

were slow and not satisfied were 78.6%. The p value of the statistical test between the speed of time and satisfaction with the implementation of e-prescription was 0.021. Respondents who stated that the prescription was appropriate and satisfied with the implementation of e-prescription were 50.5% and those who stated that the prescription was appropriate but not satisfied were 49.5%. There were no respondents who stated that it was not appropriate and not satisfied, but there were respondents who stated that it was not appropriate and not satisfied with the implementation of e-prescription, namely 100.0%. The p value of the statistical test between prescription appropriateness and satisfaction was 0.315.

DISCUSSION

A study in Indonesia revealed that the gap between female patients' expectations and perceptions of pharmaceutical services was greater than that of men, suggesting that women may be more dissatisfied with the services they receive, especially in terms of drug information and counseling (Larasanty, 2019). Although the implementation of E-prescription aims to increase efficiency, gender differences persist. Research shows that women tend to be more sensitive to waiting times than men (Druică, 2021).

Respondents were classified by age range to facilitate data grouping and statistical analysis. Research shows that patient satisfaction tends to increase with age. Waiting time is a critical factor in influencing patient satisfaction across age ranges. Older patients tend to be more patient and have a higher tolerance for waiting time (Altarifi, 2024).

Education level influences users' expectations and perceptions of pharmaceutical services. People with higher education levels may be more likely to make optimal use of pharmaceutical services and understand the importance of following medical instructions properly (Schneider, 2021). Research shows that patient satisfaction tends to increase with increasing education when accurate and complete

information is provided by pharmacists (Ismail, 2020). Research shows that type of employment influences patient satisfaction with pharmaceutical services. (Beyene, 2021).

The implementation of E-prescription can help reduce waiting time and increase patient satisfaction. This system allows faster prescription processing and reduces errors, thus speeding up service at the pharmacy (Larasanty, 2019). The suitability of drug prescriptions with the implementation of E-prescriptions is determined by the absence of errors in writing the doctor's prescription based on the type of preparation, amount of drug, dose of drug, and rules of use. This statement is contained in the questions given to respondents in the primary data. The categorization of the suitability of drug prescriptions is said to be appropriate if it meets all aspects of the suitability of the prescription.

Patient satisfaction with service quality is determined by several aspects listed in primary data, namely tangible evidence, reliability, responsiveness, assurance, and empathy. Physical evidence refers to the physical facilities, equipment, and appearance of hospital personnel that can be seen and felt by patients. Research shows that the cleanliness and comfort of medical facilities contribute significantly to patient satisfaction. Clean and comfortable facilities create a calming and safe environment for patients, which in turn increases positive perceptions of the health services received (Bu, 2022).

Reliability is the ability to deliver promised services accurately and consistently. Patients expect timely service, accurate diagnosis, and effective treatment. Reliable qualitative data about patient experiences can be used by various stakeholders to improve the reliability and effectiveness of health services (Schroeder, 2022).

Health system responsiveness, including promptness and staff readiness to address patient needs, is strongly associated with positive perceptions of health care quality and overall patient satisfaction (Negash,

2022). Research shows that the responsiveness dimension is one of several key factors influencing patient satisfaction in community pharmacies (Sinaga, 2022).

Assurance in pharmaceutical services that includes knowledge, courtesy, and the ability of pharmacy staff to instill a sense of trust and safety is essential in building patient trust and satisfaction. The competence of pharmacy staff in providing accurate information and their friendly attitude can improve the patient's experience in receiving pharmaceutical services (Sinaga, 2022). Empathy in pharmaceutical services refers to the attention given to patients individually, including understanding and caring for their needs and feelings. Health workers who demonstrate empathy can significantly increase patient satisfaction (Keshtkar et al., 2024).

Prescription screening is an important process carried out by pharmacists to ensure that the prescriptions given by doctors are safe and appropriate for patients (Dewi, 2021). There are 12 steps known as the "12 T of Pharmacy Work" that must be carried out by pharmacists, namely the right patient, right drug, right dose, right rules of use, right time, right method, right preparation, right patient condition, right information, right storage, right documentation, and right monitoring. The implementation of E-prescriptions has several positive impacts on the prescription screening process. E-prescriptions reduce the risk of errors in writing and reading prescriptions that often occur in manual prescriptions (Purwaningsih, 2021).

E-prescriptions are clearer and more structured, reducing misinterpretation. E-prescriptions allow pharmacists to quickly access patient and doctor information, as well as check the patient's previous medical history and medications. E-prescription systems are often equipped with automatic checks for drug interactions, allergies, and contraindications, which significantly reduces the possibility of medication errors. Better and more traceable documentation in electronic systems facilitates monitoring and

follow-up of patient drug use. It also facilitates periodic audits and evaluations to improve the quality of pharmaceutical services (Purwaningsih, 2021).

The implementation of E-prescription has an impact on the efficiency of pharmaceutical service time, accelerating the medical service process by reducing the time needed to write and send prescriptions. This system also shortens patient waiting times because prescriptions can be sent directly to the pharmacy without having to be physically carried by the patient (Gates, 2021).

The results of this study are in line with a study conducted by Schopf (2019), which showed that reducing waiting times through the implementation of E-prescriptions is positively associated with increased patient satisfaction. Studies in various countries have shown that patients are more satisfied with health services when their waiting times are reduced. The E-prescription system helps reduce errors in drug handling and provides more accurate and faster information to patients, which increases their trust and satisfaction with the health services received (Schopf, 2019).

Overall, E-prescription implementation not only reduces waiting time at outpatient pharmacies but also improves patient satisfaction through better efficiency and reduced errors. Thus, hospitals and clinics looking to improve their quality of care should consider fully adopting an E-prescription system. E-prescription has been shown to reduce prescription errors that often occur in manual prescriptions due to illegible handwriting. With this system, doctors can write prescriptions digitally, thereby reducing the risk of misinterpretation by pharmacists (Mohsin-Shaikh, 2019).

However, the implementation of E-prescription systems also brings significant complexity and adaptation needs, which may reduce the benefits experienced by patients in the short term. Changes in procedures and additional administrative steps can increase the time required to complete certain tasks and prescription and administration of medicines takes longer after the

implementation of the E-prescription system (Mohsin-Shaikh, 2019).

Studies have shown that implementing E-prescribing can change pharmacists' time allocation, with more time spent on administrative tasks such as checking medication history compared to direct patient interactions or other value-added activities (McLeod, 2019). This can limit pharmacists' opportunities to provide more personalized and detailed consultations to patients, which is an important component of patient satisfaction with pharmaceutical services.

Patients often have the expectation that implementing E-prescription will drastically reduce waiting times and increase direct interaction with healthcare professionals. They hope that this system will make the process faster and more efficient, so that they do not have to wait long at the pharmacy to get their medication. However, research suggests that although E-prescription can reduce prescribing errors and improve patient safety, these benefits may not be fully felt by patients (Agyeman, 2023). Some patients reported that although waiting times were slightly reduced, direct interaction with healthcare professionals was reduced due to the reliance on the electronic system, causing a feeling that the attention and consultation they received were not as intensive as before. The implementation of E-prescription in terms of drug prescription compliance does bring a number of important benefits in reducing prescription errors and increasing system efficiency. However, the impact on patient satisfaction is often not immediately felt or is not significant due to various factors such as changes in workflow and adaptation to the new system. Therefore, to improve patient satisfaction, it is important to focus not only on the technical aspects but also on how these changes are implemented and perceived by all parties involved in patient care.

CONCLUSION

1. There is a relationship between the speed of waiting time and satisfaction with the

implementation of e-prescriptions at Labuang Baji Hospital, Makassar.

2. There is no relationship between prescription suitability and satisfaction with e-prescription implementation at Labuang Baji Hospital, Makassar.

Declaration by Authors

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