



Research Paper

Service quality, outpatient satisfaction and loyalty in community pharmacies in Turkey: A structural equation modeling approach

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ABSTRACT

Background: The sustainability of community pharmacy services is dependent on service quality, patient satisfaction, and patient loyalty. While community pharmacies are perceived as medical units in terms of drug dispensing, they are also businesses that engage in social interaction with patients.

Objectives: To propose a certain model to evaluate the impact of different service factors on the level of satisfaction and to reveal the relationship between satisfaction and loyalty.

Methods: This cross-sectional study was conducted in the province of Afyonkarahisar, Turkey, between March 20, 2022, and December 30, 2022. The research data were collected with a questionnaire that included demographic information, selected service factors, satisfaction, and loyalty. The data obtained from 402 participants were analyzed using structural equation modeling (SEM).

Result: The mean age of the participants was 32.02 ± 11.81 , 53.9% were female, 58.7% were employed, 54.1% had a bachelor's degree, 11.7% had a chronic disease, and 16.1% were taking medication regularly. The findings of the study showed that communication and attitude ($\beta = 0.22$; $t = 3.90$), medicine supply ($\beta = 0.43$; $t = 7.62$), and pharmacy environment ($\beta = 0.26$; $t = 4.23$) positively affected patient satisfaction in community pharmacies. Service promptness did not have a significant effect on patient satisfaction ($\beta = 0.07$; $t = 1.18$). The most effective service factor on patient satisfaction was medicine supply ($\beta = 0.43$). In addition, the research results determined that patient satisfaction strongly affects patient loyalty in community pharmacies ($\beta = 0.72$, $t = 11.24$).

Conclusions: While community pharmacies can increase patient satisfaction through service factors, they can increase patient loyalty by improving patient satisfaction. Community pharmacies that want to have satisfied and loyal patients should focus more on service factors. Community pharmacies should not only meet the medical expectations of patients but also meet their social expectations.

1. Introduction

Community pharmacies are drug dispensing and health service locations that provide important services in promoting the health of individuals in the community, preventing and treating diseases,¹ as well as being highly accessible for outpatients.^{2,3} Community pharmacies have functions of medicine supply, medicine counseling, adherence to treatment, solving medicine-related problems, promoting health awareness, and keeping records.⁴ Community pharmacies are accepted as primary healthcare institutions in Turkey.⁵ According to the Turkish Pharmacists Association data, there are 28,465 community pharmacies in Turkey. While the number of community pharmacists per 10,000 people in

Europe is 7.23, this rate is 3.84 in Turkey. In the data of non-pharmacist staff working in pharmacies, while the average number of staff per pharmacy in Europe is 6.2, this number is 2.6 in Turkey. Non-pharmacist staff refers to those working as pharmacy assistants or pharmacy technicians.⁶ In order to improve the service quality of pharmacies, to provide faster and more effective service to the patient, and to increase the time allocated to them, sufficient number and quality of employees are required.^{7,8}

Community pharmacies operate as businesses with limited resources. This aspect of pharmacies necessitates the sustainability of managerial activities in addition to drug dispensing.⁹ Because community pharmacies are healthcare units that serve outpatient individuals and

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establish specific relationships with patients. The ability of patients to obtain their medications from any pharmacy they prefer makes competition and satisfaction crucial goals for pharmacies.¹⁰ Just like in other service sectors, the need to have loyal customers has been recognized in the healthcare sector as well.¹¹ Indeed, retaining loyal patients is easier than acquiring new ones. Loyal patients are more likely to recommend the pharmacy to others, reducing the marketing costs associated with finding new patients.¹²

Community pharmacies in Turkey are businesses that have certain capital in economic terms, create employment by employing staff, and contribute to the economy by paying taxes. In addition, appropriate patient counseling by pharmacists helps individuals to better protect their health, increase health efficiency and improve economic efficiency.¹³ On the other hand, both pharmacists and patients face some challenges in community pharmacies in Turkey. The most prominent problems for pharmacists are i) the drug price decree does not meet the expectations of pharmacists, ii) pharmacies have difficulties in meeting basic operating expenses, and iii) pharmacies' credit debts are increasing. The main issues for patients are i) increased problems with access to medicines, ii) more frequent drug shortages, and iii) increased out-of-pocket costs for medicines. Therefore, the pricing of medicines is an important issue for both pharmacies and patients.¹⁴ Indeed, despite these challenges, community pharmacies in Turkey strive to meet patient expectations, earn their loyalty, provide high-quality services, and focus on developing relationships with patients.¹⁵ In this competitive industry, community pharmacies need modern knowledge-based marketing strategies about consumer behavior to attract patients and create satisfaction and loyalty.^{16,17}

This study focuses on selected service factors (communication and attitude, service promptness, medicine supply, pharmacy environment) that affect patient satisfaction in community pharmacies and the effect of satisfaction on pharmacy loyalty. Few studies conducted in this field in Turkey have evaluated satisfaction with pharmacy services.^{18,19} More research is needed to examine service quality, satisfaction, and loyalty for sustainable pharmacy services. As a matter of fact, in the legal regulations for pharmacies, increasing the quality of the services provided in pharmacies, their continuity, and the development of good pharmacy practices were mentioned.²⁰ Satisfaction data from the services of health institutions in Turkey are announced every year, but there is no satisfaction data from community pharmacies.²¹ The results of our research will provide some insights on service quality, patient satisfaction, and loyalty to community pharmacy managers in the sector. In addition, our findings provide empirical evidence that can be compared with similar research results in different countries.

1.1. Service factors

Some service factors determine patient satisfaction in community pharmacies. This study discusses the dimensions of communication and attitude, length of service, pharmacy environment and medicine supply, which are frequently emphasized in the literature.

1.1.1. Communication and attitude

Patients in community pharmacies expect pharmacy staff to have good attitudes and communication skills.²² Patients respond more positively to pharmacy staff who respond to their needs empathetically, patiently, and carefully, especially during the first encounter.³ Therefore, good communication skills of pharmacy staff positively affect patients' health outcomes and patient satisfaction.²³ In addition, the perceived competencies and skills of pharmacy staff, their courtesy, ability to communicate and manage the relationship reliably affect patient perceptions.²⁴ On this basis, the following hypothesis is proposed:

H1. Communication and attitude affect patient satisfaction.

1.1.2. Service promptness

In community pharmacies, patients demand faster service delivery and shorter waiting times to receive their medication.^{7,25} Since the waiting time of the patients is a tangibly measurable output, patients compare this with their past shopping experiences. Thus, perception of satisfaction or dissatisfaction occurs in the patient.²⁶ The fast and accurate service that patients receive from the pharmacist, combined with respect and confidentiality, can be used as an advantage against competition.²⁷ Khudair and Raza²⁸ reported that service promptness positively affects the satisfaction of the patients toward pharmacy services. In this context, the following hypothesis has been proposed:

H2. Service promptness affects patient satisfaction.

1.1.3. Pharmacy environment

Physical elements, store design, and visibility shape patients' perceptions in community pharmacies.²⁹ Community pharmacy managers improve the pharmacy atmosphere by changing the layout and design of the pharmacy, redesigning the lighting.¹⁰ On the other hand, the cleanliness, comfortable waiting area, and image of the pharmacy are impressive factors for the customers.²² Pharmacies should resort to methods to minimize the negative emotional reactions of patients in crowded and waiting situations.¹⁰ As a result, the physical qualities of the pharmacy such as adequate waiting and private areas affect patient satisfaction.³⁰ Accordingly, the following hypothesis has been proposed:

H3. Pharmacy environment affects patient satisfaction.

1.1.4. Medicine supply

Timely provision of drugs and other medical pharmaceutical products prescribed to the patient is an important factor for the patient.²⁹ When all the prescribed drugs cannot be provided, the patient will have to come to the pharmacy for the second time.³¹ Therefore, community pharmacies must have an adequate supply of products to maintain minimum inventory and provide good service. The most obvious result that community pharmacies who do not plan their inventory correctly will face is the loss of patients.⁹ On the other hand, diversified medical products should be available in the pharmacy to meet the expectations of different customers. Because the patient expects not only drugs but also a wide range of medical products in the pharmacy.^{22,25} Then, the following hypothesis is formulated:

H4. Medicine supply affects patient satisfaction.

1.1.5. Satisfaction

Customer satisfaction is a changeable emotional response to the service received at a given time.¹⁷ On the other hand, patient satisfaction is considered an outcome measure that helps increase the quality of the health service provided.³² Understanding the patient's expectations and preferences is necessary to reveal their satisfaction level, increase their satisfaction, and improve the services.³³ A few key factors that significantly affect satisfaction include the consumer's expectations, attitudes, and intentions regarding the service provided.³⁴ Satisfied patients are more likely to bring in more business because they buy again, give recommendations, and spend more at the pharmacy.²² The following hypothesis has been proposed in terms of patient satisfaction:

H5. Patient satisfaction affects patient loyalty.

1.1.6. Loyalty

Customer loyalty refers to an intended behavior regarding a product or service. This behavior includes the possibility of continuing the purchase in the future or the customer switching to another service provider.¹⁷ Customers' loyalty to an institution depends on how satisfied they are with the services or products of that institution.¹¹ Loyalty is measured by repurchase intention or actual buying behavior. Continuing actual purchases are often the most accurate measure of loyalty.³⁵ In community pharmacies, only patient satisfaction and other

related factors are not sufficient for pharmacies to reach their goals. Therefore, community pharmacies should establish relationships based on mutual commitment to increase patient loyalty within competitive conditions.¹¹

1.1.7. Theoretical model of the research

The proposed model of the research based on the above theoretical framework and studies in the literature is shown in Fig. 1.

As seen in Fig. 1, it is assumed that communication and attitude, service promptness, pharmacy environment, and medicine supply variables affect satisfaction, and satisfaction affects loyalty. In this direction, hypotheses H1, H2, H3, H4, and H5 were tested in the research.

1.2. Objective

The aim of this study was to propose a certain model to evaluate the impact of different service factors on the level of satisfaction and to reveal the relationship between satisfaction and loyalty. In order to test the research model proposed in this study, the data collected based on the questionnaire were analyzed using structural equation modeling. Consequently, the structural equation modeling approach used in the study was designed and applied to serve the objectives.

2. Methods

2.1. Design and sample

The study was carried out in Afyonkarahisar province in the Aegean Region of Turkey. Inclusion criteria were being over 18 years of age and regularly visiting any pharmacy. In order to evaluate the pharmacy service factors correctly, people who prefer one or more pharmacies periodically were selected. According to the address-based population system, the population of Afyonkarahisar city center is 319,574 people.³⁶ The sample size to represent the population was obtained by calculating with the formula $n = [Nt^2pq] / [d^2(N-1) + t^2pq]$. In the formula, when $t = 1.96$, $p = 0.5$, $q = 0.5$, $d = 0.05$, the required sample size is 384.³⁷ However, this study was completed with 402 people in the city center.

2.2. Information about community pharmacies in the research area

The population of Afyonkarahisar city centre, where the study was conducted, is 319,574 and there are 114 community pharmacies operating in the city centre. There are 21 family health centres, one state hospital, one university hospital, and three private hospitals in Afyonkarahisar city centre. Family health centres are primary health care institutions and are located in neighbourhoods to provide easy access to

these centres. In addition, hospitals are located at different locations in the city centre. In Turkey, 40.4% of community pharmacies are located near a family health centre, 30.2% in a neighbourhood pharmacy, 9.6% in a public hospital, 6.7% in a private hospital, 2.5% in a teaching and research hospital, and 1.7% in a university hospital.¹³ These data are similar for the area where the study was conducted, and community pharmacies are mostly located close to healthcare facilities.

The working hours of community pharmacies are determined by the proposal of the chamber of pharmacists and the approval of the provincial health directorate.¹³ All community pharmacies in Afyonkarahisar city center are open between 08:00 and 18:00 on weekdays and Saturdays. Three on-duty pharmacies in geographically different areas of the city centre are open between 18:00 and 08:00 on weekdays and Saturdays. On Sundays and public holidays, only the on-duty pharmacies are open 24 h a day.

2.3. Instruments

A questionnaire form was used as data collection tool in the research. The questionnaire contains demographic information, communication and attitude, pharmacy environment, medicine supply, service promptness, satisfaction, and loyalty (Appendix A).

- Communication and attitude (CA) was measured with six items that included the communication skills and attitudes of pharmacy staff (an example item: "Pharmacy staff give adequate answers to my questions").³⁸⁻⁴¹

- Service promptness (SP) was measured with four items describing the promptness and speed of service from the pharmacy (an example item: "The time I wait to take the drugs is short").^{28,38,41}

- Pharmacy environment (PE) was measured with five items containing items about the pharmacy's internal and external environment from where the service is received (an example item: "The waiting area of the pharmacy is comfortable and wide").^{28,32,40}

- Medicine supply (MS) was measured by four items, including the availability of drugs and other medical supplies in the pharmacy from where the service is received (an example item: "I can find all the medicines I need at the pharmacy").^{28,38,41}

- Satisfaction (ST) was measured with four items indicating satisfaction with the pharmacy from where the service is received (an example item: "The service I receive from the pharmacy meets my expectations").^{32,39,41,42}

- Loyalty (LY) was measured with five items that indicate the loyalty of individuals to the pharmacy they receive service from (an example item: "I tell others positive things about the pharmacy I visit").^{15,39,43,44} All items have a five-point Likert-type agreement level ranging from 1 = strongly disagree to 5 = strongly agree.

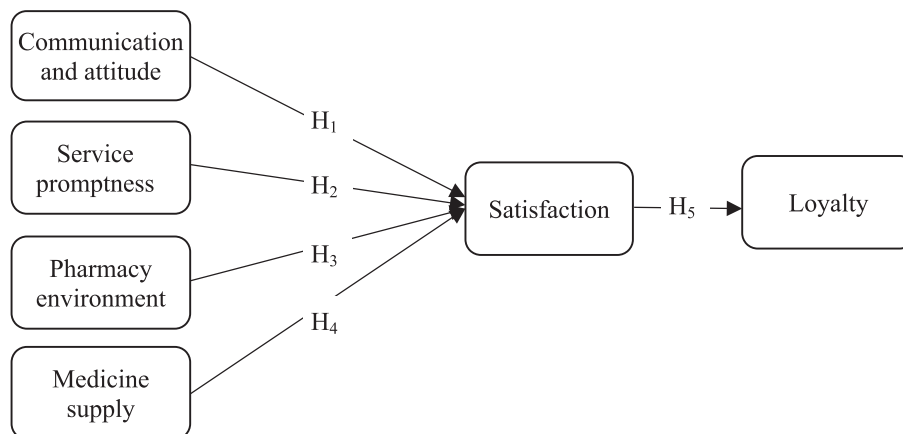


Fig. 1. Theoretical model of the research.

2.4. Data collection

The data were collected by the researchers through face-to-face questionnaires. Participants who met the research criteria between March 20 and December 30, 2022, were included in the study. As the data was collected face-to-face, the data collection process took a long time, around 9 months. The participants who volunteered for the survey were briefed about the purpose and content of the research before filling out the questionnaire form. Some questionnaires were excluded because they were answered incompletely, and evaluations were made on 393 valid questionnaires.

2.5. Statistical analysis

The data compiled in the study were analyzed through SPSS and LISREL programs. Descriptive statistics are given as percentage, mean, and standard deviation. Factor analysis, Cronbach's Alpha, Composite Reliability (CR), Average Extracted Variance (AVE), and discriminant validity values were calculated to evaluate the validity and reliability of the variables. The research model was tested using structural equation modeling. The level of significance in the analysis was accepted as $p < 0.05$.

2.6. Ethical consideration

The ethics committee approval required for this study was obtained from the Non-Interventional Clinical Research Ethics Committee of a University with the decision numbered 2022-136.

3. Results

3.1. Demographic characteristics of participants

The mean age of individuals participating in the study was $Mean_{age} = 32.02$, $SD_{age} = 11.81$. 53.9% of the participants were women, %61.3 single, 58.7% had a profession, 54.1% had a bachelor's degree, 11.7% had a chronic disease, and 16.1% were regularly using drugs. The demographic characteristics of the study participants are shown in Table 1.

3.2. Explanatory factor analysis

Explanatory factor analysis (EFA) enables reducing a large number of

Table 1
Demographic characteristics of participants.

Characteristics	n (%)
Age	
Mean (SD)	32.02 (11.8)
Gender	
Male	181 (46.1)
Female	212 (53.9)
Marital status	
Married	152 (38.7)
Single	241 (61.3)
Educational status	
Secondary school	51 (12.9)
High School	63 (16.0)
Associate degree	52 (13.2)
Bachelor's degree	213 (54.1)
Postgraduate degree	14 (3.6)
Profession status	
Yes	231 (58.7)
No	162 (41.3)
Chronic disease status	
Yes	46 (11.7)
No	347 (88.3)
Regularly using drug status	
Yes	63 (16.1)
No	330 (83.9)

observed variables to fewer factors. Factor analysis considers all variables simultaneously, without distinction between dependent and independent variables. In factor analysis, variables (factors) are created not to predict the dependent variable but to maximize their explanation of the whole set of variables. Therefore, factor analysis is a starting point for other multivariate techniques by providing information about the underlying structure of the data. In factor analysis, eigenvalues and variance percentages of specific factors are obtained. Eigenvalues represent the amount of variance explained by a factor. The percentage variance gives the percentage of variance attributable to each specific factor relative to the total variance in all factors. One of the most commonly used rotation methods in EFA is Varimax. The acceptable level of factor loadings in EFA is 0.50 or higher. In addition, the eigenvalues of the factors obtained in the EFA must be higher than 1.0 to be included in the analysis.⁴⁵ EFA results are shown in Table 2.

As seen in Table 2, factor loadings of all variables are higher than 0.50. The six factors obtained in the analysis explain 70.248% of the total variance. Kaiser-Meyer-Olkin sample adequacy value is 0.921, and Bartlett's sphericity test results are statistically significant ($p < 0.001$).

3.3. Validity and reliability results

It is recommended that Cronbach's alpha and CR values are higher than 0.70 to ensure the internal consistency of the variables. AVE values of 0.50 and above indicate sufficient convergent validity.⁴⁵ The mean, standard deviation, Cronbach's alpha, CR, and AVE values of the variables are presented in Table 3.

Table 2
Explanatory factor analysis results regarding measurement constructs.

Factor/Item	Explanatory Factor Analysis		
	Factor Loading	Eigenvalue	Explained Variance
Communication and attitude (CA)		11.000	39.285
CA1	0.830		
CA2	0.813		
CA3	0.777		
CA4	0.764		
CA5	0.762		
CA6	0.577		
Loyalty (LY)		2.626	9.378
LY1	0.801		
LY2	0.788		
LY3	0.750		
LY4	0.712		
LY5	0.641		
Pharmacy environment (PE)		1.951	6.968
PE1	0.759		
PE2	0.733		
PE3	0.732		
PE4	0.701		
PE5	0.639		
Medicine supply (MS)		1.541	5.504
MS1	0.842		
MS2	0.839		
MS3	0.752		
MS4	0.711		
Service promptness (SP)		1.534	5.480
SP1	0.797		
SP2	0.795		
SP3	0.763		
SP4	0.737		
Satisfaction (ST)		1.017	3.633
ST1	0.723		
ST2	0.649		
ST3	0.641		
ST4	0.639		

Kaiser-Meyer-Olkin Measure of Sampling Adequacy = 0.921; $\chi^2(df) = 7170.287$ (378); $p < 0.000$.

Total Explained Variance (%): 70.248.

Table 3
Descriptive statistics and reliability of variables.

Variable	Mean	SD	Cronbach's alpha	CR	AVE
Loyalty (LY)	3.754	0.86	0.874	0.870	0.579
Satisfaction (ST)	3.792	0.73	0.849	0.857	0.602
Communication and attitude (CA)	3.648	0.81	0.893	0.896	0.593
Service promptness (SP)	3.791	0.83	0.871	0.866	0.620
Pharmacy environment (PE)	3.751	0.76	0.847	0.854	0.542
Medicine supply (MS)	3.632	0.91	0.894	0.894	0.680

Note: CR and AVE values in the table were calculated using standardized loads.

As seen in Table 3, the Cronbach's alpha and CR values of the variables are higher than the threshold value of 0.70. AVE values showing convergent validity are >0.50. In the study, the discriminant validity of the variables was evaluated with the Fornell - Larcker criterion. According to the Fornell - Larcker criterion, the square root of each variable's AVE value should be higher than the correlation with other variables.⁴⁶ The results of the discriminant analysis showed that the Fornell-Larcker criterion was met and that the values of the variables were acceptable. According to these results, it can be said that the validity and reliability of the variables are ensured.

3.4. Structural equation model results

SEM is a statistical technique that includes causal and structural pathways between latent variables.⁴⁷ There are two types of SEM approaches. One is the more widely used covariance-based SEM (CB-SEM) and the other is partial least squares SEM (PLS-SEM). CB-SEM is primarily used to confirm or reject a set of systematic relationships between theoretically or conceptually constructed variables. CB-SEM determines how well a proposed theoretical model can estimate the covariance matrix for a sample data set.⁴⁸ Causal analysis, simultaneous equation modeling, analysis of covariance structures and path analysis can be performed in SEM. The purpose of SEM analysis is to test the model and hypotheses of a research.⁴⁹ Structural equation modeling (SEM) was applied in the LISREL program to test the hypotheses of the research.⁵⁰ Structural model results using the Maximum Likelihood estimation

method are shown in Fig. 2.

As seen in Fig. 2, communication and attitude ($\beta = 0.22$; $t = 3.90$), medicine supply ($\beta = 0.43$; $t = 7.62$), and pharmacy environment ($\beta = 0.26$; $t = 4.23$) variables are significant and positive predictors of satisfaction. These results confirmed the H₁, H₃, and H₄ hypotheses. The path coefficient between service promptness ($\beta = 0.07$; $t = 1.18$) and satisfaction is not significant. This result did not confirm the H₂ hypothesis. The variable with the highest coefficient ($\beta = 0.43$) on pharmacy satisfaction is medicine supply. Satisfaction has a strong positive effect ($\beta = 0.72$, $t = 11.24$) on loyalty. This result confirmed H₅. Structural equations obtained by SEM analysis are given in Eq. (1) and Eq. (2):

$$ST = 0.22^* CA + 0.07^* SP + 0.43^* MS + 0.26^* PE, Error var. = 0.38, R^2 = 0.62 \tag{1}$$

$$LY = 0.72^* ST, Error var. = 0.48, R^2 = 0.52 \tag{2}$$

Depending on the Eqs. (1) and (2), the variables CA, SP, MS, PE explain 62% of the ST variable, and the ST variable explains 52% of the LY. Hypothesis test results are shown in detail in Table 4.

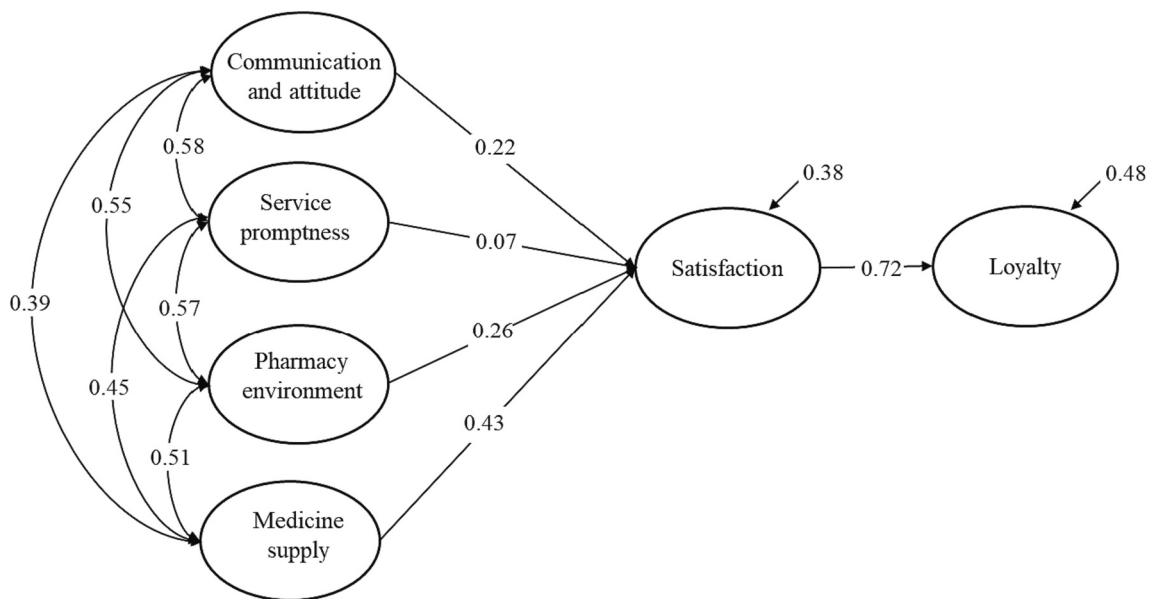
As seen in Table 4, all hypotheses were confirmed except for the H₂ hypothesis.

The structural model of the research was evaluated through goodness-of-fit criteria. The goodness of fit in SEM is examined with Chi-square/degree of freedom (χ^2 /df), Root Mean Square Error of Approximation (RMSEA), Standardized Root Mean Square Residual (SRMR), Normed Fit Index (NFI), Comparative Fit Index (CFI),

Table 4
Hypothesis test results.

Hypotheses	Paths	Standardized Coefficient (β)	t - value	Result
H ₁	CA → ST	0.22**	3.90	Confirmed
H ₂	SP → ST	0.07	1.18	Not confirmed
H ₃	PE → ST	0.26**	4.23	Confirmed
H ₄	MS → ST	0.43**	7.63	Confirmed
H ₅	ST → LY	0.72**	11.24	Confirmed

** : $p < 0.01$.



Chi-Square = 731.40, df=336, P - value = 0.00000, RMSEA = 0.055

Fig. 2. Research model results.

Nonnormed Fit Index (NNFI) criteria.⁵¹ The goodness of fit values of the SEM model included in the study are shown in Table 5.

As seen in Table 5, the goodness of fit values of the research model are within acceptable ranges. According to this result, the research model tested has a good fit.

4. Discussion

The Health Transformation Programme announced in Turkey, led to radical changes in the health system. In this process, the public authority brought new legal regulations regarding the activities of community pharmacies and the sale of drugs. Thus, many citizens, who could not buy medicines from the community pharmacy due to their social security, gained access to medicines through the transformation program.⁵² The fact that outpatients can buy their medicines from any community pharmacy enabled pharmacies to review their service quality and to tend to important marketing issues such as satisfaction and loyalty. In this study, it was determined that communication and attitude, medicine supply, and pharmacy environment in community pharmacies had a positive effect on patient satisfaction, while service promptness had no significant effect. In addition, it was determined that patient satisfaction has a strong effect on patient loyalty.

Drug shortages have become a global problem in the post-COVID-19 era. Affected by this situation in Turkey, there were noticeable drug shortages in community pharmacies in 2022. In 2022, there were serious problems in accessing medicines for chronic diseases, oncology medicines, antibiotics, antidepressants, pediatric antipyretics, painkillers and antibiotics, ear drops, blood pressure medicines, eye drops, and seasonal flu and cold medicines.⁵³ In the findings of the study, the most effective variable on patient satisfaction was found to be medicine supply. This finding suggests that patients may appreciate the availability of such a medicine supply service more if they experience difficulties in obtaining medicines. While this result is similar to the Barghouth, Al-Abdallah, and Abdallah⁴¹ study on pharmacy satisfaction, it differs from the Khudair and Raza²⁸ study. Barghouth, Al-Abdallah, and Abdallah⁴¹ reported in their study in Jordan that the most important service factor on patient satisfaction is medicine supply. Khudair and Raza,²⁸ in their study in Qatar, found that medicine supply had no significant effect on satisfaction. The differences between the results of the studies may be due to the characteristics of the sample population, availability of medicines, the position of the pharmacy in the healthcare system, patient perceptions and expectations. When medicines and other medical products from community pharmacies are sufficient, patients are more satisfied when they reach these products whenever they want. Otherwise, patients look for drugs from other pharmacies when they cannot find medicine in the pharmacy they apply. This causes both loss of time and dissatisfaction.²⁵ Therefore, pharmacy workers need to regularly check their current inventories in order to manage their medicine supply well.⁴¹ In addition, the difficulties faced by pharmacies in purchasing medicines beyond their normal stock management activities should not be ignored. In order to prevent drug shortages in Turkey, it is necessary to establish a correct system in the drug price decree by taking into consideration the opinions of all stakeholders.⁵³

The findings of the current study showed that the communication skills and attitudes of pharmacy workers had a positive effect on patient satisfaction. This result is similar to previous studies conducted in different countries.^{22,25,28,41} Patients who come to community pharmacy need more medical information sharing, clearer communication, and advice on more effective treatment.⁵⁴ A strong patient-pharmacy

relationship built on the basis of two-way exchange of information, courtesy, mutual respect, and trust in the communication process with patients is the key to satisfaction.⁴¹ Therefore, pharmacists and other pharmacy staff in community pharmacies should have good training in terms of communication with patients and customer relations.²⁵

In community pharmacies, service elements such as a comfortable waiting area, the availability of a private area for counseling,²⁵ and the attractiveness of the facility affect the patient's perception of purchase and ultimately the choice of pharmacy.²⁹ The findings of this study confirmed the positive effect of the pharmacy environment on patient satisfaction. This result supports previous research findings.^{22,24,29} Since the pharmacy atmosphere can increase the use of pharmacy services, it is recommended that pharmacies design their atmospheres in accordance with the professional concept.⁵⁵ Having sufficient lighting and cleanliness, the convenience of waiting areas, and the number of seats ensure that their customers appreciate the community pharmacies.⁵⁶

Patient satisfaction in community pharmacies is related to different variables such as healthcare provider characteristics or waiting times.³² In previous studies, it has been reported that service promptness affects patient satisfaction positively.^{28,38,41} Interestingly, this study's findings showed that service promptness had no effect on patient satisfaction. The effect of service promptness on satisfaction was positive but not significant. This finding illustrates that the perception of service promptness is not a priority factor for outpatient satisfaction in the sample population. Márquez-Peiró and Pérez-Peiró³² explained that one of the issues with the lowest score in patient satisfaction is the waiting time. This result is partially similar to the findings of our study. Although this study findings are not significant, the waiting time of patients in the pharmacy should be reduced. The quality, safe and fast services to be provided to the patients will increase their satisfaction and increase their repurchasing and positive word of mouth marketing behaviors.⁴¹

In this study, patients' satisfaction and loyalty scores from community pharmacies were found to be above the medium level. Similarly, in studies in the literature, satisfaction with community pharmacies^{3,8,38,55,57} and loyalty were reported at moderate to high levels.³ Also, this study determined that patient satisfaction strongly affects pharmacy loyalty. This result supports previous research findings.^{11,29,39,41,57,58} Factors such as the demographic characteristics of the individuals representing the sample, cultural differences in perception, length of service experience in the community pharmacy, frequency of visits to the pharmacy should be taken into account when assessing satisfaction and loyalty levels of outpatients. The satisfaction level of patients in community pharmacies increases the probability of showing positive behaviors toward the pharmacy, making repeat purchases, positive word of mouth communication, and increasing the volume of shopping. This result contributes to the long-term success and sustainability of the pharmacy.^{25,39,41} The more positive the quality of the services offered in the pharmacy is perceived, the more satisfied the patients are. Likewise, as patient satisfaction increases, the loyalty of individuals to the pharmacy they apply increases.¹² If pharmacies want to increase patient satisfaction and loyalty, they should periodically review service quality elements from the patients' perspective.²⁹ To gain loyal customers, a pharmacy must implement competitive strategies aimed at creating the right service attributes that customers value most rather than gaining a single competitive advantage.⁵⁹

Table 5
The Goodness of Fit Criteria.

Fit indices	Chi ²	Df	Chi ² /df	RMSEA	SRMR	NFI	CFI	NNFI
Criteria			≤ 3	≤ 0.08	≤ 0.10	≥ 0.90	≥ 0.95	≥ 0.95
Research Model	731.27	336	2.17	0.055	0.056	0.97	0.98	0.98

4.1. Limitation

This study was carried out under some limitations. Only four service factors of community pharmacies were investigated in the study. As the sample in this study was selected only from the city centre of Afyonkarahisar, it cannot be generalized to all outpatients receiving services from community pharmacies. The research results reflect the data of the sample group reached in the provincial centre. Therefore, the research population cannot represent the whole population of Turkey. The fact that the research was carried out in a limited period of time and in only one region limits its generalisability. No weighting technique could be used in the data analysis process of the research. The questionnaire used as a data collection tool is based on self-report. It is possible that some demographic characteristics of the participants (age, education level) may differ from the average patient population in community pharmacies. Responses from the sample included outcomes based on service users' desires rather than their experience of using a pharmacy on a monthly basis, particularly for access to medicines or chronic disease management.

The working hours of community pharmacies in Turkey are determined by official regulations. Pharmacies must comply with the working days and hours of pharmacies in the region to which they are affiliated. Where there is more than one pharmacy, only duty pharmacies remain open outside the specified working hours and on public holidays. In Turkey, the chamber of pharmacists prepares lists of pharmacy working hours by taking into account the characteristics of the location of the pharmacies and the pharmacy capacity. These lists are put into practice with the approval of the provincial health directorate.¹³ Therefore, working hours were not included as a service factor in this study.

In Turkey, drug prices are set by a "Price Evaluation Commission" coordinated by the Ministry of Health. As the public authority is responsible for the prices of medicines to be sold in community pharmacies, price is not analyzed as a service factor. In Turkey, the products other than pharmaceuticals that can be sold by community pharmacies are determined by legislation. Apart from pharmaceuticals, community pharmacies mainly sell medical supplies, cosmetics, dermocosmetics, food supplements and vitamins. Although discounts are not offered in every pharmacy, they are mostly offered on non-pharmaceutical products.¹³ The extensive range of products and the discount can be seen as a factor that increases patient satisfaction in the Turkish market. Another factor likely to affect outpatient satisfaction and pharmacy preference is proximity to the pharmacy, but this was not assessed in this study. In addition to these factors, refill reminders for patients are not a service offered by every pharmacy in Turkey. Hence, it was not included in the study. Refill reminders may be a service that can improve outpatient satisfaction and loyalty. Therefore, it would be useful to include discount, extensive range of products, proximity to the pharmacy, and refill reminder for patients as service factors in a further study of community pharmacies in Turkey.

Finally, outpatients' perceptions of service quality, satisfaction, and loyalty were assessed using the scores of the variables. In future quantitative studies, we suggest that the service quality elements be examined in a larger scale. In addition, evaluating satisfaction and loyalty from the pharmacy together with quantitative and qualitative methods can contribute to this field. Finally, the pharmacy-patient relationship can be measured to include the influence of the dominant culture of the country.

4.2. Implication for pharmacy practice

This study has some implications for community pharmacy practice. In the current study, the most important factor affecting patient satisfaction is medicine supply. In Turkey, drug shortages can be seen in certain periods in pharmacies. These difficulties in accessing medicine cause many negativities such as not being able to take the medicine, searching in other pharmacies, and changing the treatment. Therefore,

patients who find their medicines and other medical products in the pharmacy they apply for treatment leave satisfied. At this point, pharmacies should closely monitor the operational processes in order to ensure that the drug stocks are at an adequate level.

The second variable affecting patient satisfaction in our study is the pharmacy environment. In this direction, pharmacy managers should pay attention to modern store designs, lighting and cleanliness, and sufficient waiting areas should be created. It should be taken into consideration that active pharmacies should redesign their pharmacy environments, and that the pharmacy environments of new pharmacies may have an impact on satisfaction. Another factor that increases patient satisfaction is the communication skills and attitudes of pharmacy staff, their courteous behavior, and their explanatory answers to questions. In this context, training can be given to pharmacists and other staff working in the pharmacy on health communication and patient satisfaction. Individuals with communication skills and training in this field may be preferred when recruiting employees to the pharmacy. While community pharmacies can increase patient satisfaction through service factors, they can increase patient loyalty by improving patient satisfaction. Community pharmacies need loyal customers who will constantly shop from them in order not to lose their income. Community pharmacies that want to have satisfied and loyal patients should focus more on service factors. Finally, it is recommended that community pharmacies not only meet the medical expectations of patients, but also respond to their social expectations.

5. Conclusion

This study makes some contributions to the field of service quality, customer satisfaction, and customer loyalty. First of all, the service quality factors, patient satisfaction, and loyalty issues in community pharmacies have not been adequately addressed in Turkey. Our study findings showed that communication and attitude, medicine supply, and pharmacy environment positively affect patient satisfaction in community pharmacies. Service promptness did not have a significant effect on patient satisfaction. The most effective service factor on patient satisfaction was medicine supply. In addition, our results determined that patient satisfaction strongly affects patient loyalty in community pharmacies. The results of the current study should be evaluated in the light of its limitations. In making this evaluation, it will be useful to consider the service factors included in the study, the pharmacy services during the study period, the demographics of the outpatients in the sample population, and the pharmacy service experiences of outpatients as a whole. As a result, this study provides pharmacy managers with some insights into the quality, satisfaction and loyalty of pharmacy services in Turkey. At the same time, our results describe empirical evidence available to all stakeholders of the community pharmacy industry.

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CRedit authorship contribution statement

İsa Gül: Conceptualization, Methodology, Investigation, Formal analysis, Writing – original draft. **Ender Tunçer Helvacıoğlu:** Conceptualization, Methodology, Writing – review & editing. **Sinan Saraçlı:** Conceptualization, Methodology, Formal analysis, Writing – review & editing.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence

the work reported in this paper.

are available from the corresponding author upon reasonable request.

Data availability

The datasets generated during and/or analyzed in the present study

Appendix A. Questionnaire

Table A1
Measurement of the variables.

Construct	Item	Description
Community pharmacy where I receive services; Communication and attitude (CA)	CA1	The pharmacy staff spend enough time communicating with me.
	CA2	Pharmacy staff behave in a cheerful manner.
	CA3	Pharmacy staff are courteous and respectful.
	CA4	Pharmacy staff give adequate answers to my questions.
	CA5	Pharmacy staff communicate with me in a way I can understand.
	CA6	Pharmacy staff help to solve problems encountered when taking medication.
Loyalty (LY)	LY1	I encourage my friends and relatives to use the pharmacy I visit.
	LY2	I consider myself loyal to the pharmacy I visit.
	LY3	I would recommend the pharmacy I visited to others.
	LY4	I consider the pharmacy I visit as the first choice.
	LY5	I tell others positive things about the pharmacy I visit.
Pharmacy environment (PE)	PE1	I like the inside and outside of the pharmacy.
	PE2	The lighting and temperature of the pharmacy are appropriate.
	PE3	The design of the pharmacy is modern.
	PE4	The waiting area of the pharmacy is comfortable and wide.
	PE5	The pharmacy is clean and tidy.
Medicine supply (MS)	MS1	My prescription medicines are available in the stocks of the pharmacy I visit.
	MS2	I can find all the medicines I need at the pharmacy.
	MS3	I can get medical supplies and nutritional supplements from the pharmacy when I need them.
	MS4	I find the quantity and variety of medicines in the pharmacy sufficient.
Service promptness (SP)	SP1	The time I wait to take the drugs is short.
	SP2	The service delivery time of pharmacy staff is acceptable.
	SP3	I don't wait long to be attended to in the pharmacy.
	SP4	I leave the pharmacy within a reasonable time given the number of my prescription medicines.
Satisfaction (ST)	ST1	I am satisfied with the purchase experience in the pharmacy.
	ST2	The pharmaceutical service I receive from the pharmacy is very good.
	ST3	The pharmacy offers improved services.
	ST4	The service I receive from the pharmacy meets my expectations.

Level of agreement: ① = Strongly disagree, ② = Disagree, ③ = Neutral, ④ = Agree, ⑤ = Strongly agree.

Appendix B. Demographic questions

Gender	: <input type="checkbox"/> Male <input type="checkbox"/> Female
Age	: (Please write year)
Educational status	: <input type="checkbox"/> Secondary school <input type="checkbox"/> High School <input type="checkbox"/> Associate degree <input type="checkbox"/> Bachelor's degree <input type="checkbox"/> Postgraduate degree
Marital status	: <input type="checkbox"/> Single <input type="checkbox"/> Married
Profession status	: <input type="checkbox"/> Yes <input type="checkbox"/> No
Chronic disease status	: <input type="checkbox"/> Yes <input type="checkbox"/> No
Regularly using drug status	: <input type="checkbox"/> Yes <input type="checkbox"/> No

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