

Patients' satisfaction towards Wasfaty services in Al Ahsa province, Saudi Arabia – 2022

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ABSTRACT

Background: The e-prescriptions service connects primary healthcare centers and hospitals to selected community pharmacies in various locations to allow easy access to the nearest pharmacy in the neighborhood, thus facilitating the process of drug dispensing. This study aims to assess patients' satisfaction towards Wasfaty services delivered by Ministry of Health healthcare centers. **Materials and Methods:** A cross-sectional study was conducted in Al Ahsa province in Saudi Arabia among adult patients who used Wasfaty services. An electronic Arabic questionnaire including demographic characteristics of patients and questions to assess their satisfaction level with the e-prescription "Wasfaty" service in terms of different aspects. **Results:** A total of 481 participants were included in the study. Females represented 53.4% of them, and 28.1% were aged 50 years or over. Overall, most of the patients (84.1%) were either satisfied or strongly satisfied with the service (4.28 ± 0.57). After controlling for confounding, patients with chronic diseases were more satisfied with the "wasfaty" service compared to those without chronic diseases. The history of chronic disease was responsible for approximately 2.4% variability of patient satisfaction (r -square = 0.024). Patients' geographic region, age, sex, and educational level were not significantly associated with their satisfaction with "wasfaty" service. **Conclusion:** The majority of patients, particularly those with chronic diseases, were satisfied with Wasfaty service. However, less satisfaction was observed regarding medication availability.

Keywords: E-prescriptions, satisfaction, Saudi Arabia, Wasfaty

Introduction

Electronic prescriptions, which are known as e-prescriptions, are one of the key e-services in the ongoing process of the healthcare system.^[1] The direct computer-to-computer transmission of electronic prescriptions (e-prescriptions) from the prescriber's office to community pharmacies is the definition of e-prescribing.^[2] This service is initiated by physicians and then sent electronically to community pharmacies, where patients can receive all their medications and other healthcare products for free.

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The e-prescriptions service connects primary healthcare centers (PHCCs) and hospitals to selected community pharmacies in various locations to allow easy access to the nearest pharmacy in the neighborhood, thus facilitating the process of drug dispensing.^[3]

E-prescriptions are found to be beneficial for both the patients and the medical staff. Introducing e-prescriptions into the healthcare system has a positive impact on patients' treatment because it eliminates the problem of illegible prescriptions. Also, e-prescriptions increase patient safety, as expected, by reducing the possibility of dispensing the wrong medication. In addition, the service has been designed to improve the care for chronically ill patients as they do not have to make an in-person doctor's

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appointment to receive a prescription for continued treatment, which will result in significant time savings for both patients and physicians because they can be issued remotely via an online consultation.^[1] This functionality was important and proved to be valuable during the COVID-19 pandemic, as many people were in isolation or quarantine and unable to go to the pharmacy in person. Also, one of the most important patient benefits of e-prescriptions is the ability to get each prescribed medicine from a different pharmacy, which makes it easier for patients to obtain all the necessary medicinal products independently, and the pharmacy's stock should not affect the continuity of the patient's treatment.^[4]

In Saudi Arabia, the healthcare system has changed in the last few years.^[5] In the Saudi 2030 Vision Plan, the government-private partnerships that were given more attention played a significant role in this change. All efforts were implemented to achieve the Vision 2030, in terms of focusing on primary preventative healthcare as well as increasing the participation of the private sector in the delivery of these health services. This was established by introducing an initiative that incorporated private community pharmacies into the medication provision.^[6] In 2018, an e-prescribing system called "Wasfaty" was launched in government healthcare centers at both primary and secondary levels.

In 2016, Saudi Arabia launched its new Vision 2030 with a 15-year strategic plan. On April 4, the Ministry of Health (MOH) released its strategic plan for pharmaceutical care and the quantity and quality of pharmacy practice programs as one of its 15 strategies to achieve Vision 2030.^[7] One of the goals of the MOH's strategic plan is to provide complete pharmaceutical electronic services in healthcare settings.^[8] Wasfaty (An e-prescription platform) is one of the services of a national company for the unified purchase of medicines, devices, and medical supplies ("Nupco") under the supervision of the MOH in the Kingdom of Saudi Arabia. Wasfaty service was launched to achieve the Kingdom's Vision 2030 of improving the quality of health services and facilitating access to them by linking hospitals and healthcare centers with community pharmacies so that the drug is available everywhere and at any time for free.^[9] Many national studies have concluded that replacing handwritten prescriptions with e-prescribing would have several benefits.^[10]

The MOH transformed pharmaceutical care services from PHCCs to private community pharmacies to meet Vision 2030. One of the goals of the MOH's strategic plan is to provide complete pharmacy electronic services in government and private healthcare settings.^[8] To achieve this goal, one of the projects implemented by the MOH was Wasfaty,^[9] which is an electronic system that enables physicians in the MOH primary care clinics to electronically initiate prescriptions for patients and send them directly to community pharmacies. Once a prescription is initiated, the patient receives a message including the patient ID and prescription code on the cell phone. Then, the patient can go directly to the nearest community pharmacy and collect medications.^[9] The "Wasfaty" program aims to implement the

highest standards to facilitate medication-dispensing services, ensure the availability of medications to all beneficiaries, and save time and resources for government health agencies.^[9]

A community pharmacy is defined as "a healthcare facility that is responsible for the provision of pharmaceutical services to a specific community." It allows the public access to medications and healthcare advice. In Saudi Arabia, there are ~ 9000 community pharmacies under the regulation of the MOH, the Saudi Food and Drug Authority (SFDA), and the Saudi Commission for Health Specialties (SCHS). The MOH Department of Pharmaceutical Care organizes and supervises pharmacy practice-related activities in Saudi Arabia, the SCHS is responsible for the accreditation of pharmacists, and the SFDA ensures the safety of food, medications, biological and chemical substances, and electronic products.^[11,12]

Community pharmacy is the largest private sector in the pharmacy field. They employ the largest proportion of the pharmacy workforce in the country. Saudi Arabia's pharmacy ownership is limited to Saudi pharmacists that are registered with the SCHS, the licensing authority for healthcare professions. The number of pharmacies that can be owned by a single pharmacist is limited to 30.^[5] Nowadays, community pharmacies are usually managed by one to two pharmacists or one pharmacist and an assistant. They typically operate 7 days a week from 8 am to 12 am.^[13] Some pharmacies, on the other hand, are open 24 h a day.^[14]

Some criteria are required and have to be fulfilled by the community pharmacies to enable them to join the Wasfaty system, which includes: a valid license for the premises; registration at Nupco (the leading provider of healthcare products to the government health sector in the country); the use of approved suppliers from the Wasfaty list; a valid pharmacist license from the SCHS for all employees; a computer with an internet connection to access the online system; and a label printer.^[9]

This study aims primarily to assess patients' satisfaction towards Wasfaty services delivered by MOH healthcare centers in Al Ahsa province, Saudi Arabia.

Materials and Methods

Study area

The study was conducted in Al Ahsa province in Saudi Arabia, which is the largest governorate in the Eastern province of Saudi Arabia, and involved different cities and villages.

Study population/eligibility criteria

Adult patients living in Al Ahsa province in Saudi Arabia are the target population of our study.

Inclusion criteria

- Patients are eligible for free governmental primary healthcare (PHC) services in Saudi Arabia.

- Patients ≥18 years old and <75 years old.
- Adult patients previously used Wasfaty services.

Study design

A cross-sectional study design was adopted. The study was conducted between January and April 2023.

Sample size

The sample size was determined based on the total adult Saudi population of Al Ahsa City in Saudi Arabia (856670),^[15] by using a computerized formula with a 95% confidence level and 5% margin of error.^[16] Accordingly, the estimated sample size was (384).

Sampling techniques

A multistage cluster stratified sampling technique was applied. Stage one: the sample was distributed according to the four sectors of the city (Northern, Eastern, Western, and Southern). Stage two: a list of the PHCCs in each zone was obtained according to the official distribution of Al Ahsa Health Cluster; then, multiple PHCCs were selected conveniently from each zone. Stage three: a convenient sample was taken from each center as our ultimate sampling unit.

Data collection method

The data were collected using an electronic questionnaire designed using Google Forms written in simple Arabic language and constituted of two main parts: The first part included questions about demographic characteristics. The second part includes the rate of satisfaction level with the e-prescription "Wasfaty" service in terms of different aspects. This part was adopted from a recent Saudi study.^[17] The consent to use the questionnaire was obtained from the corresponding author.

Data analysis

The data entry and statistical analysis were done using SPSS version 28.0. Categorical variables were described using frequency and percentage, whereas numerical variables were described using arithmetic mean and standard deviation (SD). Independent *t*-test and one-way analysis of variance sets were utilized to compare the arithmetic mean of satisfaction score between two groups and more than two groups, respectively. Multiple linear regression was adopted to control for confounding effects, and a *P*-value less than 0.05 was considered factually critical.

Ethical consideration

Before the data collection, ethical approval was obtained from the Ethical Committee of the Al Ahsa Health Cluster. Informed consent was obtained from all the participants who volunteered to take part in the study. All of the information in the questionnaires was confidential.

Results

A total of 481 participants were included in the study. Table 1 summarizes their demographic characteristics. Females

represented 53.4% of them, and 28.1% were aged 50 years or over. They were almost equally distributed in different regions of Al Ahsa City. More than half (55.1%) had a bachelor's degree/higher, and the vast majority (99.6%) were Saudi nationals. A history of inveterate maladies was observed among 58.2% of the members Figure 1.

Patients' satisfaction with "wasfaty" service

From Table 2, on a scale ranging between strongly dissatisfied "1" and strongly satisfied "5", participants were highest satisfied with refilling medicines without seeing a doctor (4.22 ± 0.93) and accessibility of pharmacies (4.49 ± 0.71), followed by pharmacists' ethics and behavior (4.47 ± 0.73) and availability of pharmacists (4.47 ± 0.70) whereas they were lowest satisfied with availability of drugs (3.63 ± 1.10). Overall, most of the patients (84.1%) were either satisfied or strongly satisfied with the service (4.28 ± 0.57) Table 2.

Table 1: Demographic characteristics of the participants (n=481)

Demographic characteristics	Frequency	Percentage
Gender		
Male	224	46.6
Female	257	53.4
Age in years		
18–29	109	22.7
30–39	125	26.0
40–49	112	23.3
≥50	135	28.1
Region of residence		
Middle	118	24.5
Southern	106	22.0
Eastern	124	25.8
Southern	133	27.7
Educational level		
High school/less	216	44.9
Bachelor's degree/higher	265	55.1
Nationality		
Saudi	479	99.6
Non-Saudi	2	0.4

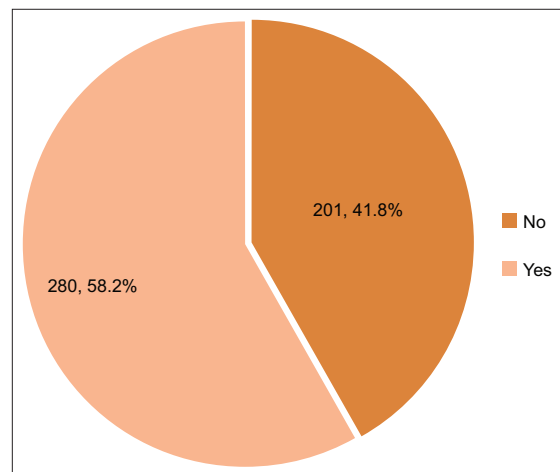


Figure 1: History of chronic diseases among the participants

Table 2: Patients' satisfaction with "Wasfaty" service

	Strongly dissatisfied No (%)	Dissatisfied N (%)	Somewhat satisfied N (%)	Satisfied N (%)	Strongly satisfied N (%)	Mean±SD
Accessibility of pharmacies	1 (0.2)	8 (1.7)	32 (6.7)	153 (31.8)	287 (59.6)	4.49±0.71
Availability of services at pharmacies	1 (0.2)	6 (1.3)	62 (12.9)	187 (38.9)	225 (46.7)	4.31±0.76
Knowledge and skills of pharmacists	0 (0.0)	8 (1.7)	44 (9.2)	186 (38.7)	243 (50.4)	4.38±0.72
Pharmacists' ethics and behavior	0 (0.0)	12 (2.5)	32 (6.7)	153 (31.8)	284 (59.0)	4.47±0.73
Availability of drugs	13 (2.7)	65 (13.5)	139 (28.9)	135 (28.1)	129 (26.8)	3.63±1.10
Availability of pharmacists	2 (0.4)	6 (1.3)	27 (5.6)	176 (36.6)	270 (56.1)	4.47±0.70
Refill medicines without seeing a doctor	10 (2.1)	18 (3.7)	54 (11.2)	173 (36.0)	226 (47.0)	4.22±0.93
Home delivery services (during COVID-19)*	5 (1.0)	4 (0.8)	46 (9.6)	100 (20.8)	104 (21.6)	4.14±0.89
Instructions to use medicine (oral/written)	0 (0.0)	10 (2.1)	43 (8.9)	184 (38.3)	244 (50.7)	4.38±0.73
Collaboration between physicians and pharmacists whenever needed*	6 (1.3)	15 (3.1)	45 (9.4)	97 (20.2)	106 (22.0)	4.05±0.99
Waiting time	3 (0.6)	19 (4.0)	74 (15.4)	162 (33.7)	223 (46.4)	4.21±0.89
Overall	30 (0.7)	152 (3.5)	507 (11.7)	1509 (34.9)	2131 (49.2)	4.28±0.57

SD=Standard deviation, *Items removed from analysis due to the incomplete response of these questions in the questionnaire

Factors associated with "wasfaty" patients' satisfaction

Among the studied factors, the only one that was significantly associated with patients' satisfaction was the history of having chronic diseases, as people who had chronic disease were more satisfied than the nonchronic disease group (4.34 ± 0.46 versus 4.21 ± 0.68), *P* = 0.015 Table 3.

As shown in Table 4, after controlling for confoundings, patients with chronic diseases were more satisfied with "Wasfaty" services compared to those without chronic diseases. History of having a chronic disease was responsible for approximately 2.4% variability of patient satisfaction (*r*-square = 0.024). Patients' geographic region, age, sex, and educational level were not significantly associated with their satisfaction with "Wasfaty" services.

Discussion

The implementation of the e-prescriptions service "Wasfaty" has been suggested to affect prescribing and dispensing processes positively, and it improves patient safety, quality of care, efficiency, and cost-effectiveness. Evaluating e-prescribing from different aspects is important, including the attitudes of involved personnel. The perceptions and expectations of healthcare professionals and patients do not always correspond, which makes patient satisfaction an important factor when evaluating healthcare services. Satisfied patients are more likely to use healthcare services in the future, to value and maintain

Table 3: Factors associated with "Wasfaty" patients' satisfaction

	Overall satisfaction score Mean±SD	<i>P</i>
Gender		
Male (<i>n</i> =224)	4.32±0.57	0.140*
Female (<i>n</i> =257)	4.25±0.56	
Age in years		
18-29 (<i>n</i> =109)	4.35±0.58	0.110**
30-39 (<i>n</i> =125)	4.21±0.65	
40-49 (<i>n</i> =112)	4.23±0.54	
≥50 (<i>n</i> =135)	4.34±0.48	
Region of residence		
Middle (<i>n</i> =118)	4.36±0.61	0.131**
Southern (<i>n</i> =106)	4.29±0.56	
Eastern (<i>n</i> =124)	4.19±0.56	
Southern (<i>n</i> =133)	4.29±0.53	
Educational level		
High school/less (<i>n</i> =216)	4.31±0.49	0.350*
Bachelor's degree/higher (<i>n</i> =265)	4.26±0.62	
Nationality		
Saudi (<i>n</i> =497)	NA	NA
Non-Saudi (<i>n</i> =2)		
History of chronic diseases		
No (<i>n</i> =201)	4.21±0.68	0.015*
Yes (<i>n</i> =280)	4.34±0.46	

SD=Standard deviation, NA=Not applicable, *Independent t-test; **One-way analysis of variance (ANOVA) test

relationships with healthcare providers, to complain about treatment, and to take an active role in their healthcare.^[18]

Table 4: Best fitting multiple linear regression model for patients' satisfaction with "Wasfaty" service

	B	t	P
Constant	4.337	42.617	<0.001
History of chronic diseases (reference: No)	0.154	2.706	0.007

R-square=0.024, Model analysis of variance (ANOVA): $F=2.342$, $P=0.041$, Variables entered and excluded: geographic region, age, sex, and educational level.

In the present study, participants were highest satisfied with refill medicines without seeing a doctor and accessibility of pharmacies, followed by pharmacists' ethics and behavior and availability of pharmacists, whereas they were lowest satisfied with the availability of drugs and overall, most of the patients (84.1%) were satisfied with the service. In a recent survey carried out in Poland, 72.1% of patients preferred e-prescription because it is more convenient for them, and a large percentage of them were positive about obtaining prescriptions for continued treatment, without a personal doctor visit.^[4] In Sweden (2011), the vast majority of the participants had a positive attitude towards e-prescriptions (85%) and electronic storing of prescriptions (86%) and regarded e-prescriptions to be safe (79%), creating benefits for them (78%) and promoting faster dispensing (69%).^[18]

However, in another recently conducted Saudi study involving MOH hospitals and primary healthcare centers, overall satisfaction of patients with Wasfaty service was moderate, with the highest satisfaction given to pharmacy personnel in terms of their knowledge, availability, communication skills, counseling skills, privacy, confidentiality and therapy management, as well as openness and approachability and also, pharmacy premises-related features in terms of availability and accessibility, scored high, but were less satisfied with medication availability and communication between pharmacists and prescribers.^[17] A previous Saudi study suggested that seven themes related to the new "Wasfaty" service were identified and divided into three categories: perception toward the transition in pharmaceutical care, experience of the Wasfaty service, and concerns about and limitations of the Wasfaty service and indicated that the Saudi community was generally satisfied with the new Wasfaty service and highlighted its benefits as easier access, time flexibility, and less crowded community pharmacies. In expansion, the Wasfaty service provided them with way better communication with pharmacists, superior instruction on their medicines, better availability of medications, better control over medication dispensing, and easier refills compared to primary healthcare pharmacies. However, the community complained about the lack of privacy in local pharmacies, the number and location of community pharmacies offering the "Wasfaty" service, some technical problems, the lack of female pharmacists, few Saudi pharmacies, the lack of drug labels, and limited or no instructions for drug storage.^[19] Goundrey-Smith (2018) also showed that e-prescribing is generally preferred to paper prescribing by patients, and those who used e-prescribing

were satisfied with the e-prescribing process as e-prescribing may influence patient medication-taking behaviors through expanded comfort, expanded patient-provider communication, and the perception of made strides care compared to conventional paper prescribing.^[20]

In the present study, patients with chronic diseases were more satisfied with "Wasfaty" service compared to those without chronic diseases. This finding could be explained by the fact that chronic disease patients are using drugs for life, and e-prescription reduces medication errors, helps in healthcare cost savings,^[21] and facilitates the refill without the need to see the physician sooner than the recommended follow-up period for their condition which in turn will save time also.

The present study has some limitations that should be addressed. First, it has been conducted in Al Ahsa province among adult patients; therefore, its generalizability over other areas in the Kingdom of Saudi Arabia should be considered with caution. Second, a cross-sectional design was adopted, and this design does not prove causality between the outcome and independent variables. Finally, utilizing an electronic questionnaire to collect data means that some patients (who did not have such technology) were not included in the study. Despite those limitations, the study carries public health importance in evaluating such a relatively new service in Saudi Arabia to suggest solutions to improve it.

Conclusion

The majority of patients, particularly those with chronic diseases, were satisfied with Wasfaty's services. However, less satisfaction was observed regarding medication availability. Therefore, the availability of drugs at pharmacies should be a priority for those responsible about the delivery of Wasfaty's services. In addition, further longitudinal nationwide study is needed to have a clearer image of the situation in the whole Kingdom of Saudi Arabia.

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Conflicts of interest

There are no conflicts of interest.

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