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ORIGINAL RESEARCH

Patients' Contentment with Wasfaty and Health Services in Community Pharmacies in Tabuk and the Factors Associated with It

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Background: Patient contentment is an indicator of the quality of pharmacy services. Pharmacists can recognize and resolve drug-related issues, provide patients with the information they need, raise patient contentment, and improve the standard of patient care. Utilizing E-prescription (Wasfaty) is one of the key services in the healthcare system that achieves the aspiration of the Kingdom's Vision 2030 by improving efficiency, accuracy, and convenience for patients and healthcare professionals. The present study seeks to evaluate the effect of the Wasfaty app on patients' contentment in the Tabuk region and the factors associated with it.

Methods: A cross-sectional study was conducted from January to March 2024 in Tabuk among patients using the Wasfaty app. Data was collected using a convenience sampling technique and a self-administered questionnaire. The analysis of the data was conducted using SPSS software version 27.0. Descriptive statistics (mean, percentage, standard deviation, p-value) illustrate the respondents and their characteristics. Mantel-Haenszel test was used to estimate the odds ratio. Significance was reached when $p < 0.05$.

Results: A total of 422 beneficiaries participated in the study. The majority of respondents were female (55.2%) and the majority were under 50 years. Only 23.5% of the included population visit the community pharmacy for chronic diseases. A majority of the participants (68.7%) viewed Wasfaty services positively. Availability of the Wasfaty service, medication availability, detailed instructions by pharmacists, efficiency of the Wasfaty app, and service speed and waiting time were positively associated with their overall positive experience.

Conclusion: The results of our study demonstrated overall high contentment with Wasfaty app and its effectiveness in improving patient medication management. The factors associated with the patient's contentment helps in promoting the quality of care provided to the patients.

Keywords: Wasfaty app, community pharmacy services, contentment

Introduction

In the Kingdom of Saudi Arabia (KSA), the healthcare system has transformed to a great extent, focusing on Saudi Vision 2030, with the motive of improving the healthcare system to fulfill the higher incidence of chronic diseases, higher healthcare costs, and high demands of the public.[1] Provision of healthcare to the public was primarily carried out by the government sectors free of cost; later, services were provided by the private sector also, with the availability of health insurance or the ability of individuals to pay.[2] Utilizing E-prescription (Wasfaty) is one of the key services in the healthcare system that achieves the aspiration of the Kingdom's vision 2030 by improved efficiency, accuracy, and convenience for both patients and healthcare professionals.[3] Wasfaty is an electronic prescription application, by which the patients can get the medicines from the nearest pharmacy. Both patients and medical personnel have been found to benefit from e-prescriptions.[4] Electronic prescribing has been found to enhance patient compliance and

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safety, and to reduce healthcare costs.[5] Since e-prescriptions solve the issue of unreadable prescriptions, their introduction into the healthcare system improves patient care. As anticipated, e-prescriptions also improve patient safety by lowering the chance of giving the incorrect drug.[6] An essential aspect of Wasfaty is its ability to facilitate real-time communication between healthcare professionals and pharmacies, which guarantees precise and timely filling of prescriptions while reducing errors associated with conventional paper prescriptions. Furthermore, the application has been developed to enhance the management of patients with chronic illnesses by eliminating the need for them to schedule an in-person visit with their doctor to obtain a prescription for ongoing treatment. This will save a great deal of time for both doctors and patients, as prescriptions can be provided remotely through virtual consultation.[7]

The usage of electronic prescription system has been found to have several advantages, such as the readability, accuracy, and completeness of electronic prescriptions, all of which reduce the risk of errors and omissions during the dispensing process.[8] Enhanced security measures are provided, which decreases the workload related to repeat dispensing, ensuring that patients receive their medication promptly, patients benefit from not having to wait for their paper prescriptions to be processed, and the exchange of information between the prescriber and pharmacist enables pharmacists to engage more actively in patient-focused care.[9] However, the electronic prescription system is also linked to improper prescriptions written by doctors and delays in prescription delivery. Dispensing delays could result from a large number of prescriptions with ambiguous information.[10] Patient contentment is an important criterion in any healthcare application. Poorly constructed electronic prescription systems can adversely impact the quality of healthcare, its implementation, and overall consumer contentment.[11] Research has been carried out in various areas of Saudi Arabia to evaluate the patient's contentment with Wasfaty app. A cross-sectional study conducted in Makkah region observed that opportunities for enhancement are present to boost patient satisfaction, including tackling medication shortages and facilitating clear communication between patients and pharmacists.[12] In a survey conducted in the Al Ahsa province, 84.1% of the patients expressed at least some level of satisfaction with Wasfaty.[7] However, the contentment of people in Tabuk towards the Wasfaty app was not explored. It is important to identify the factors influencing the satisfaction index so that the health care services could be enhanced. The World is transforming towards digital apps and if there is any dissatisfaction with any of the variables, focus could be paid to those factors to overcome it.[13] Wasfaty app from the year it was launched in 2019, various changes have been made until now, including alerts for drug-drug interactions, look alike, and sound alike medications. The upgrade was made based on the research carried out among the people using this app. Moreover, continuous monitoring is essential for any app to maintain and upgrade its efficiency. Hence, this study was conducted to assess the patients' contentment with Wasfaty and health services in community pharmacies in Tabuk and identifying the factors associated with it.

Methods

Study Design

A cross-sectional study was conducted using a convenience sampling technique.

Study Setting and Population

The patients using the Wasfaty app were chosen from the community pharmacies to complete the questionnaire.

Sample Size

With a 95% confidence level, 5% margin of error, a population of approximately 400000 people above 18 years old in Tabuk, a confidence interval of 0.05, and the population proportion of 50%, the required minimum sample size was determined to be 384.

Inclusion Criteria

Patients over 18 years using Wasfaty app in Tabuk and willing to participate in the study.

Exclusion Criteria

Patient refusing to provide informed consent.

Ethical Approval

Ethical consent was granted by the Local Research Ethics Committee, University of Tabuk, bearing the approval number UT-324-162-2023. This study complies with the Declaration of Helsinki.

Study Procedure

The study was conducted from January to March 2024. The participants were explained about the research and asked to give written informed consent in the informed consent form. A guarantee was provided concerning the privacy of the collected data. A self-administered anonymous questionnaire was provided to the patients using the Wasfaty app and the data were recorded. The Arabic questionnaire was prepared based on a literature review.[14–17] It is reliable and validated, previously used among Arabic speakers. The reliability of the questionnaire was assessed and the Cronbach alpha values exceed 0.7, which signifies reliable inter-item consistency. The questionnaire consists of questions related to the services provided in the community pharmacies through the Wasfaty app. It consists of 2 sections – Demographic details like age, gender, education levels, and patients' contentment with the Wasfaty app and health services in community pharmacies. The analysis of the data was conducted using SPSS software version 27.0. Descriptive statistics (mean, percentage, standard deviation, p-value) illustrate the respondents and their characteristics. Mantel-Haenszel test was used to estimate the odds ratio. Significance was reached when $p < 0.05$.

Results

Demographic Traits of Participants

Table 1 provides the summary of the demographic traits of the participants involved in this study. The distribution of gender, age, education level, nationality, occupation, presence of chronic diseases, and marital status among the participants provides a comprehensive overview of the population involved in the study. The study sample consists of 422 participants, with a higher proportion of females (55.2%, n=233). The age distribution of the participants shows that the largest age group was 18–30 years, comprising 46.9% (n=198) of the attendees.

Table 1 Demographic Traits of the Participants

Demographic Traits	Categories	Number (N=422)	%
Gender	Male	189	44.8
	Female	233	55.2
Age	18–30	198	46.9
	31–40	74	17.5
	41–50	80	19
	51–60	48	11.4
	61–70	14	3.3
	71–80	7	1.7
	81–90	1	0.2

(*Continued*)

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Table 1 (Continued).

Demographic Traits	Categories	Number (N=422)	%
Educational level	No education	5	1.2
	Primary	8	1.9
	Secondary	59	14
	Diploma	56	13.3
	Bachelor's	259	61.4
	Master's	8	1.9
	Ph.D	27	6.4
Nationality	Saudi	417	98.8
	Non-Saudi	5	1.2
Job	Employed	202	47.9
	Unemployed	220	52.1
Chronic diseases	Yes	99	23.5
	No	323	76.5
Marital status	Single	199	47.2
	Married	212	50.2
	Divorced	5	1.2
	Widowed	6	1.4

Contentment with the Wasfaty App

Figure 1 illustrates the patient's contentment with the Wasfaty app in the community pharmacy services. Overall, 68.7% of the participants were satisfied with community pharmacy services provided through the Wasfaty app.

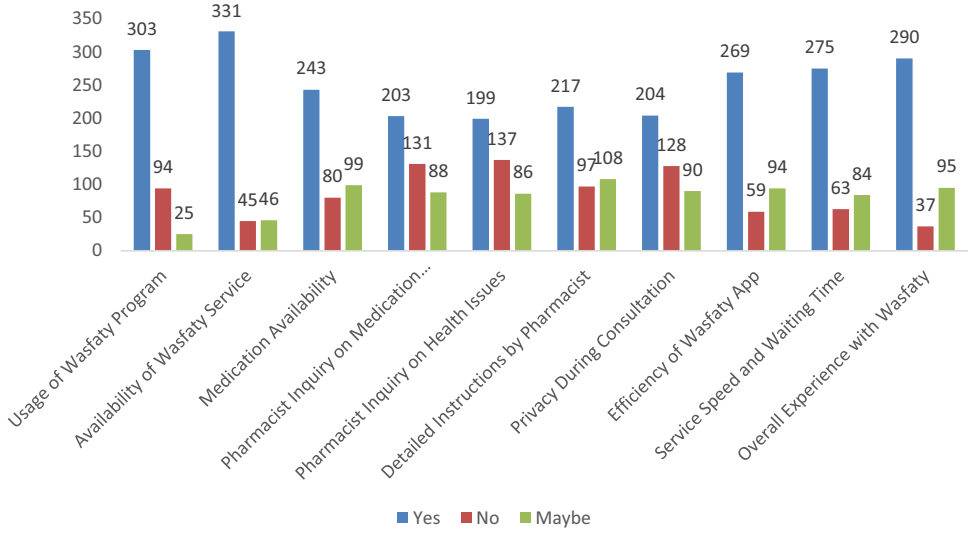

Figure 1 Contentment with the Wasfaty app in the community pharmacy.

Odds Ratios for Satisfaction Variables and Overall Experience with Wasfaty Services

Table 2 presents the crude odds ratios (COR), adjusted odds ratios (AOR), confidence intervals (CI), and p-values for various variables affecting the overall experience with the Wasfaty app. All variables were associated with positive experiences in the unadjusted analysis ($p < 0.05$). However, after adjusting for other factors, availability of the Wasfaty service, medication availability, detailed instructions by pharmacists, efficiency of the Wasfaty app, and service speed and waiting time were positively associated with their overall positive experience. These results highlight the critical factors contributing to a positive overall experience with the Wasfaty program in the community pharmacy, emphasizing the importance of service availability, medication availability, pharmacist interactions, privacy, app efficiency, and reduced waiting times.

Odds Ratios for Demographic Characteristics and Overall Experience with Wasfaty

Table 3 presents the COR, AOR, CI, and p-values for the association between demographic characteristics and overall experience with the Wasfaty app in the community pharmacy. The demographic variables did not significantly influence the overall experience with the Wasfaty app in the community pharmacy.

Descriptive Statistics for Overall Experience with Wasfaty

The descriptive statistics for the overall experience with the Wasfaty app provide an insightful summary of participants' contentment levels (Table 4). The range of the overall experience scores is 1, indicating that the responses fall within a single unit on the scale used to measure contentment. The mean score for the overall experience is 1.31. This average suggests that the majority of the participants had a positive experience with the Wasfaty app. The median score is 1.00, which means that at least half of the participants rated their experience as positive. This further confirms the tendency

Table 2 Odds Ratios for Satisfaction Variables and Overall Experience with the Wasfaty Program

Variables	Categories	Frequency n (%)		COR [95%C.I]	p-value	AOR [95%C.I]	p-value
		Positive	Negative				
Usage of Wasfaty Program	Yes	237 (78.2)	66 (21.8)	4.472 [2.843–7.033]	<0.0001	1.253 [0.543–2.890]	0.597
	No	53 (44.5)	66 (55.5)				
Availability of Wasfaty Service	Yes	260 (78.5)	71 (21.5)	7.446 [4.472–12.397]	<0.0001	5.047 [2.026–12.575]	0.001
	No	30 (33)	61 (67)				
Medication Availability	Yes	213 (87.7)	30 (12.3)	9.405 [5.800–15.251]	<0.0001	3.196 [1.553–6.580]	0.002
	No	77 (43)	102 (57)				
Pharmacists' inquiry on Health Issues	Yes	175 (87.9)	24 (12.1)	6.848 [4.149–11.301]	<0.0001	2.213 [0.774–6.333]	0.139
	No	115 (51.6)	108 (48.4)				
Detailed Instructions by Pharmacist	Yes	187 (86.2)	30 (13.8)	6.173 [3.847–9.904]	<0.0001	2.826 [1.278–6.249]	0.010
	No	103 (50.2)	102 (49.8)				
Privacy During Consultation	Yes	183 (89.7)	21 (10.3)	9.040 [5.354–15.264]	<0.0001	1.642 [0.722–3.735]	0.237
	No	107 (49.1)	111 (50.9)				
The efficiency of Wasfaty App	Yes	249 (92.6)	20 (7.4)	34.010 [19.057–60.695]	<0.0001	4.393 [1.981–9.743]	<0.0001
	No	41 (26.8)	112 (73.2)				
Service Speed and Waiting Time	Yes	255 (92.7)	20 (7.3)	40.800 [22.557–73.795]	<0.0001	8.193 [3.801–17.662]	<0.0001
	No	35 (23.8)	112 (76.2)				

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Table 3 Odds Ratios for Demographic Characteristics and Overall Experience with Wasfaty

Demographic Characteristics	Categories	COR [95%C.I]	p-value	AOR [95%C.I]	p-value
Gender	Male	1.150 [0.759–1.742]	0.510	1.107 [0.684–1.791]	0.679
	Female				
Age	18–30	0.989 [0.556 −1.761]	0.971	1.030 [0.462–2.300]	0.942
	31–40	0.940 [0.534–1.654]	0.830	0.941 [0.388–2.282]	0.892
	41–50	1.097 [0.561–2.146]	0.787	1.196 [0.427–3.350]	0.734
	51–60	1.219 [0.392–3.787]	0.732	0.986 [0.259–3.751]	0.984
	61–70	0.877 [0.166–4.648]	0.878		
Education level	No education				
	Primary	1.700 [0.346–8.344]	0.513	0.987 [0.159–6.141]	0.989
	Secondary	0.746 [0.286–1.945]	0.549	0.668 [0.236–1.886]	0.446
	Diploma	0.741 [0.282–1.948]	0.543	0.703 [0.258–1.914]	0.491
	Bachelor's	0.733 [0.321–1.672]	0.460	0.658 [0.274–1.581]	0.350
Nationality	Saudi	3.349 [0.553–20.284]	0.188	3.191 [0.454–22.437]	0.244
	Non-Saudi				
Job	Employed	1.204 [0.796–1.819]	0.379	1.343 [0.730–2.473]	0.343
	Unemployed				
Chronic disease	Yes	1.062 [0.651–1.730]	0.811	1.316 [0.727–2.384]	0.237
	No				
Marital status	Single	1.094 [0.720–1.662]	0.674	1.410 [0.692–2.870]	0.692
	Married	1.544 [0.252–9.481]	0.639	1.480 [0.173–12.653]	0.173
	Divorced	1.158 [0.207–6.496]	0.867		
	Widowed				

Table 4 Descriptive Statistics for Overall Experience with Wasfaty

Descriptive Statistics	Value
Range	1
Mean	1.31
Median	1.00
Skewness	0.810
Positive	290 (68.7%)
Negative	132 (31.3%)

towards contentment among the participants. The skewness value is 0.810. Positive skewness indicates that the distribution of the overall experience scores is slightly skewed to the right, with more participants reporting higher contentment levels. Out of the total participants, 68.7% (n=290) reported a positive experience with the Wasfaty app,

while 31.3% (n=132) reported a negative experience. This significant majority of positive responses highlight the overall favorable reception of the Wasfaty app among the participants.

These descriptive statistics underscore the general contentment with the Wasfaty app and its services, with a majority of the participants expressing positive experiences. This data serves as a crucial indicator of the program's effectiveness and areas of success.

Discussion

This study assessed the patients' contentment with Wasfaty and health services in community pharmacies in Tabuk and the factors associated with it. The age distribution indicated a predominance of young adults aged 18–30 years (46.9%), likely due to their greater familiarity and engagement with digital platforms. However, older adults (5.2% aged 61–90 years) were underrepresented, limiting the applicability of findings to this population, who may have unique healthcare needs and preferences. The identified barriers in older adults to electronic applications in other studies were lack of knowledge, self-efficacy, support, and provision of information.[18]

The educational background of participants further skews the generalizability. With 61.4% holding a bachelor's degree, the sample reflects a highly educated group, which may influence their ability to navigate and benefit from digital health services like Wasfaty. In contrast, participants with lower education levels (1.9% with primary education and 1.2% with no formal education) were underrepresented. This educational imbalance highlights a potential bias toward the perspectives of educated individuals,[19] which should be addressed in future studies by including a more diverse participant pool. Knowledge and education should be provided to the patients with lower educational levels or those with less tech-savvy experience, so that the satisfaction level can be increased, which could result in better healthcare. In our study, only 23.5% of the participants visit community pharmacies for chronic diseases. This may be correlated with the age distribution of the participants showing that the largest age group was 18–30 years.

The vast majority of participants (98.8%) were Saudi nationals, reflecting the local context of the study. However, the low representation of non-Saudis (1.2%) limits the extent to which findings can be applied to a wider array of populations. Subsequent studies should focus on involving participants from different cultural and national backgrounds to evaluate the wider relevance of the Wasfaty app.

The Wasfaty app demonstrated high levels of user satisfaction, with 68.7% of participants reporting positive experiences. Consistent with our study results, a recent study demonstrated that 70% of participants were satisfied with the Wasfaty app and community pharmacy services.[12] Satisfaction was strongly associated with factors such as the app's accessibility, availability of medications, and quick service delivery. These observations line up with former investigations spotlighting the significance of operational efficiency in enhancing healthcare satisfaction.[15] The role of pharmacists in providing thorough instructions also emerged as a critical determinant of satisfaction, underscoring the importance of effective communication in promoting medication adherence and improved health outcomes. These findings align with research demonstrating that pharmacist-patient interactions significantly improve treatment outcomes.[20] Electronic prescription applications in different countries have shown to exhibit favorable effects, by reducing medication errors and enhancing consumer satisfaction.[21] So, real-time continual surveillance is essential to document the effectiveness of electronic prescribing in Saudi Arabia.

Interestingly, demographic elements like age, gender, level of education, and work status had no discernible impact on overall contentment levels. This suggests that the Wasfaty app provides equitable access and meets the diverse needs of its users, enhancing its broader applicability and potential scalability. Consistent with our study results, there was a non-association between gender and consumer satisfaction with community services in a study conducted in Ethiopia.[22] In contrast, females had less satisfaction with pharmacy services than males, in a study conducted in Pakistan.[23] The authors also stated that decreased contentment may be because females were hesitant to get drug information from the pharmacists.

A very high COR (40.800 [22.557–73.795]) obtained for service speed and waiting time indicates a very strong positive association with the overall experience with Wasfaty app. The significant correlation between shorter wait times and higher satisfaction emphasizes the need for continuous optimization of service delivery. Efficient workflows and

timely medication availability are crucial to sustaining user confidence and involvement. These findings were in line with previous studies, which consistently identified waiting times as a primary factor influencing healthcare satisfaction.[24]

Limitations

The underrepresentation of older adults and those with lower educational levels (particularly the small proportion with no education or primary education) could limit the generalizability of the findings. Future studies should strive for a more diverse and representative sample to better understand satisfaction across different demographics, especially given the barriers older adults may face in using digital applications. Since the study is based on self-reported satisfaction, there may be potential response bias. Participants who had a positive experience may be more inclined to complete the survey, while those with negative experiences may opt out. This could skew the results toward a more favorable perception of the Wasfaty app. Employing mixed methods, including qualitative interviews, might help balance out the bias and capture a wider range of experiences.

Areas for Improvement and Recommendations

Despite the overall positive outcomes, 31.3% of participants reported negative experiences, highlighting the areas for improvement. Common issues included difficulties navigating the app, limited availability of certain medications, and unmet expectations. Addressing these concerns through user-centered design improvements, expanded medication inventories, and clearer communication about service limitations could enhance user contentment.

Additionally, the study highlighted the importance of privacy during consultations as a key determinant of contentment. As healthcare services become increasingly digitalized, maintaining robust data protection measures is essential to ensuring patient trust and confidence in such applications. Future studies should be conducted, focusing on the satisfaction of older adults, since the Ministry of Health in KSA has implemented priority electronic cards for them to reduce their wait time in the pharmacy.

Conclusion

The results of our study demonstrated overall high contentment with Wasfaty app and its effectiveness in improving the management of patient medication. Our study highlights the critical factors contributing to a positive overall experience with the Wasfaty app in the community pharmacy, emphasizing the importance of service availability, medication availability, pharmacist interactions, privacy, app efficiency, and reduced waiting times. As healthcare services become increasingly digitalized, maintaining robust data protection measures is essential to ensuring patient trust and confidence in such applications.

Disclosure

The authors report no conflicts of interest in this work.

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