

# Primary Health Care Physicians Perceptions about Centralized Electronic Prescription Service in Qassim Province, Saudi Arabia

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## Keywords

Primary health care center · Physicians · Perceptions ·  
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## Abstract

**Introduction:** In the current era, electronic prescriptions are increasing in developed countries including Saudi Arabia, where the resources were adequate to manage the manpower and technical issues. The objective of the study was to find the perceptions of the physicians about the centralized electronic prescriptions at the primary health care centers (PHCCs) and suggestions to improve the existing service. **Methodology:** A cross-sectional study was carried out among the PHC physicians and distributed questionnaires to 200 physicians through Google Links. Based on the WhatsApp group numbers, circulated a questionnaire to entire Qassim PHCC physicians and 131 physicians responded to our survey. Data were entered and analyzed with SPSS 21.0 version and necessary statistical tests were applied. **Results:** In the current study, 70.2% ( $n=92$ ) were males and 40.5% ( $n=53$ ) were 25–35 years of age. About 91.6% ( $n=120$ ) of physicians gave an opinion of average and above satisfaction regarding Wasfaty service. Approximately, one-fifth of physicians (20.6%,  $n=27$ ) gave their opinion as did

not face difficulty with Wasfaty service. Approximately, half of the physicians (53.4%,  $n=70$ ) gave a response as the Wasfaty service did not reduce the waiting time for the patient. There was significant association was observed among physicians fully satisfied with increasing prescription time and age ( $p < 0.05$ ). One-third, 34.8% ( $n=55$ ) of physicians gave an opinion on an internet problem, and 26.6% ( $n=42$ ) physicians mentioned more options of medication at Wasfaty service. **Conclusions:** Based on the results of the study, PHCC physicians' satisfaction regarding the Wasfaty service was good. But, need to address certain modifiable issues like internet problems, and more options for medication availability at Wasfaty service. Need similar studies as a follow-up survey are required to substantiate the current study findings and to improve Wasfaty service satisfaction.

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## Introduction

Primary health care centers' (PHCC) initiation globally started since the declaration of Alma Atta in the year 1978. There was a tremendous improvement in service provisions based on the principles of Primary health care

in Saudi Arabia and globally. Still, there are some gaps like community voluntary participation to utilize the health care services available at PHCCs. Health care providers' periodical training and scholarly activity are useful to enhance the quality of services to the population [1–3].

As per the Vision 2030 Saudi Arabia document [4], need quality Family Medicine doctors and at the same time health care services also as competent care to reach the population's needs. With that perspective, several changes made at PHCC to improve the health care delivery services. Of, one of the interventions is the "Wasfaty" service facility provision for primary health care attendees. Wasfaty is nothing but an electronic prescription of the patient and the person can access to get the medicines from any public or private pharmacy without any payment from the patient. Wasfaty service can be provided as an additional access channel to bridge the PHCCs and hospitals for patients to receive medications from the pharmacy including community pharmacies through an e-prescribing solution to the population [5].

As the noncommunicable diseases (NCD) trend increases drastically throughout the globe, first-level care physicians must be confident to care for, treat, teach, and mentor for relieving their illness and create an atmosphere of confidence in people to utilize e-prescriptions. As a result, many NCD patients visit the PHCC for their regular treatment, follow-up, and complications management purpose as the NCDs exhibits chronic nature. In this perspective, accountability of medications by electronic prescription is suitable. Better care facilities delivery at PHCC and it indirectly helps reduce some cost burden to the government as well as the reduction of specialist manpower load at tertiary care centers. Thus, that specialist doctors can provide quality care for their specific specialist case management according to their specialty [6].

For empowering, the population in the areas of better utilization of health services, monitoring and follow-up of the patients, timely delivery of health services, treatment, and other preventive services like child and adult immunization services from digital health or e-health is required for the smooth functioning of the services, especially where the internet resources and literacy rate is high in the country [7]. Literacy plays a role in appointment booking, receiving medication, and other electronic prescription alert purposes. In the year 2018 in Qassim, Saudi Arabia, the Ministry of Health, started electronic prescription services for primary health care attendees.

In view of the above situations and circumstances, the present study was planned to conduct in Qassim province

PHCC physicians for the improvement of electronic prescription services. Periodical collection of opinions from the stakeholders is very important to improve the quality and recommendations to the administrators or policymakers in Qassim province.

### *Objectives*

1. To describe the demographic factors and physicians' perceptions about Wasfaty service in relation to Primary Health care delivery in Qassim province.
2. To determine the barriers and factors associated with the Wasfaty service utilization by the physicians.
3. To develop a recommendation based on the study results to the policymakers for improvement.

### **Materials and Methods**

#### *Study Setting and Participants*

The present cross-sectional study was conducted among the physicians working at multiple PHCCs of Qassim province during the period from February 2022 to August 2022. During the COVID-19 period, to maintain the preventive measures, we selected the option of Google link to share and also to save the time of primary health care physicians. Prior to the circulation of the questionnaire link, oral informed consent was taken about participant convenience to answer the questionnaire. The questionnaire was sent to the concerned primary health care physicians, based on the telephone directory, through Google link as a self-administered questionnaire to find their general perceptions about the Wasfaty service, and their suggestions were collected for the improvement of Wasfaty service.

#### *Sample Size*

In Qassim province, close to 156 PHCCs were functioning as per Qassim Health Cluster information, and also approximately 572 physicians were working at all PHCCs of Qassim. Hence, 30% of the total physicians from the Qassim PHCC were included in our study, based on physicians using electronic prescriptions. The 30% of the total PHCC physicians were comprised of 172 physicians (30% out of 572 total physicians in Qassim).

To maintain the accuracy of the study and less participation was anticipated by online mode questionnaire distribution. Hence, our sample increased to 200. We distributed questionnaires to 200 physicians based on physicians' WhatsApp groups and individual personal contact numbers. Also taken consideration of physicians' exposure to Wasfaty service was mandatory for sharing the Google link, based on inclusion criteria. With the oral consent of the particular doctor, an appointment for the distribution of the questionnaire was scheduled by telephone call by the principal investigator. After confirmation from the physician suitable time, the questionnaire was distributed in the form of a Google link.

#### *Sampling Method*

For the selection of primary health care centers in the Qassim province, random numbers were generated by using a random picker website [8]. Physicians' selection by the convenience

sampling method was used as the pandemic of COVID-19 was going on globally including in Saudi Arabia during the data collection period.

#### *Data Collection Tool*

Initially, we verified the functions of the Wasfaty service, and then principal investigators and other coinvestigators were identified to conduct the study on the Wasfaty service. Then, we had more than 10 occasions to construct the questionnaire, and huge group discussions were carried out. In addition to that we reviewed the previous studies conducted in Saudi Arabia among PHCC regarding the transition of pharmaceutical care [9] and also another study reviewed among interns about digital health [10]. Then, the questionnaire was reviewed by experts in the research field working at the Qassim Health Cluster as a process of questionnaire validation. The questionnaire was prepared in English and distributed to the participants. After questionnaire preparation completion, the pilot study was done on 10 physicians to see the order of questions, refinement of questions, and feasibility. Pilot study participants' observations were not included in the final study results.

Details of the physical characteristics were collected as also perceptions from the PHCC physicians including difficulties while using Wasfaty and also suggestions collected for improvement of the service. The questionnaire consisted mainly of three parts, first part dealt with demographic variables of physicians' age, gender, qualification, and position of the doctor. The second part denoted that the physician's satisfaction with Wasfaty service use, prescription time, consultation time with Wasfaty, and patient general perspectives was collected through physicians about Wasfaty service.

The third part stated that physicians' general perceptions about the Wasfaty service included two important open-ended questions about difficulties and suggestions while using the Wasfaty service. In our questionnaire, we made it compulsory to mention at least a minimum of one option in Google form, as they are dealing with and using Wasfaty service prescriptions for their patients. In the case of the difficulties question, 158 responses were noted from 131 physicians and similarly for the suggestion for improvement of the existing Wasfaty service, 135 responses were collected from 131 PHCC physicians. Some physicians responded with more than one answer to open-ended questions.

Regarding these two open-ended questions (difficulty while using Wasfaty service and suggestions to improve the existing Wasfaty service) based on their answers in our survey, stratified into some themes to condense the results as it is an open-ended question. For example, after looking at the answers from the participants at the time of analysis, we kept one of the themes internet problems as a difficulty faced during Wasfaty service question, some physicians mentioned as bandwidth was not good, some answered an interruption of internet, internet speed was less, sometimes systems were giving some trouble, some people mentioned WIFI connection problem and other mentioned as the internet was slow, some physicians mentioned as a software problem. All these categories were labeled as internet/software problems as a major theme to condense their answers to get fruitful information. Similarly, all other varieties of categories of difficulties are mentioned as different themes. Themes generation was done after observation of the participant's responses ( $n=131$ ).

Similarly, for the suggestion to improve Wasfaty service, some physicians suggested medication, some mentioned more options of medicines in Wasfaty service, a few physicians expressed a wide range of medications, and some mentioned as fewer options to prescribe. All these options are kept as a theme of the addition of more options of medications at the Wasfaty service.

For the not applicable suggestion theme, some PHCC physicians made a dot (.) as we have given as a mandatory option, some as nothing, some as no, a few physicians as no suggestion, and suggestion which already existed in the current Wasfaty service (refill option) as they are lack of awareness about function. All these types of answers are labeled as "not applicable suggestions" in our study.

#### *Inclusion and Exclusion Criteria*

Inclusion criteria in our study, physicians were working at PHCCs of Qassim and exposure to Wasfaty service was included. Physicians working at other hospitals (other than PHCC), physicians whose contact numbers were not available, physicians on vacation, and mobile numbers changed due to some reasons were excluded from the study.

#### *Ethical Considerations*

This study is not yet evaluating any doctor's decision of treatment and other integrity concerning case management. The study's aim was exclusive to improve further the Wasfaty service by knowing certain facts from the physicians' perceptions as per the study design. After obtaining the Ethical Committee approval, the data collection process was started. Confidentiality of the participant information was considered and tried our level best to participate with the PHC physician voluntarily.

#### *Statistical Analysis*

Means and standard deviations were calculated for the continuous variables. For the categorical variables, the  $\chi^2$  test was applied. For the continuous variables, ANOVA and logistic regression analysis were applied. Data were transferred from Google Forms to MS-Excel, then transferred to Statistical Package for Social Sciences 21.0 version (SPSS). After completion of the data collection, open-ended questions were collected and analyzed separately in MS-Excel and manual correlation based on themes as our sample was small. The frequencies of themes are based on the common answers from the participants. Statistical significance was considered in our study as the probability ( $p$ ) value was less than or equal to 0.05.

## **Results**

The current study questionnaire was distributed to almost 200 physicians through electronic communication with periodical reminders (once in 3 days) and the PHCC physicians' participation was 131. The response rate in the study questionnaire was reported as 65.5% (131/200). The mean age and standard deviation (SD) in the study population were observed as  $38.57 \pm 9.62$  years and the age range was 40 (25–65 years). About 75% ( $n=98$ ) of the participants below the age of 45 years were in our study.

**Table 1.** Demographic characteristics among the physicians working at the primary health care center of Qassim province

Variables	Number of participants	Percentage
Saudi	58	44.3
Non-Saudi	73	55.7
Age, mean±SD, years	38.57±9.62	
Age category		
25–35 years	53	40.5
36–45 years	45	34.4
46–60 years	26	19.8
>60 years	3	2.3
Not answered	4	3.1
Gender: Male	92	70.2
Female	39	29.8
Qualification – MBBS	59	45.0
MBBS + Diploma	22	16.8
Board and above	50	38.2
Position – GP	69	52.7
Specialist doctor	42	32.1
Consultant doctor	20	15.3
Experience of doctor, mean±SD, years	9.62±7.12	
Total	131	100%

About 55.7% (*n*-73) of physicians were expatriates and 44.3% (*n*-58) were Saudi nationality. In the present study, approximately 70.2% (*n*-92) of males participated. In relation to the age-group, about 40.5% (*n*-53) were belonged to 25–35 years in the current study. About 55% (*n*-72) were having qualification of diploma (Saudi Diploma Family Medicine) and above education (Saudi Board Education). Approximately, 47.4% (*n*-62) of participants have the position of specialist and consultant in all PHCCs of Qassim. The mean and standard deviation of experience of the physicians in the current study were reported as 9.62 ± 7.12 (Table 1).

In the study group, about 91.6% (*n*-120) gave an opinion of average and above satisfaction with Wasfaty’s service. Nearly, one-fifth of physicians (20.6%, *n*-27) gave their opinion as did not face difficulty with Wasfaty service. Approximately, more than half of the physicians (53.4%, *n*-70) provided a response as did not reduce patient waiting time for Wasfaty service. About 7.6% (*n*-10) of physicians did not respond to the question of patients’ acceptance for the utilization of Wasfaty (Table 2).

In the current study, the majority of the physicians gave opinions for the patient perspectives on the nonavailability of medicines at the pharmacy, partial availability at the pharmacy, and visiting more than one pharmacy to take medicines as 54.2% (*n*-71), 71% (*n*-93), and 83.2% (*n*-109), respectively (Table 3). In relation to Wasfaty service satisfaction, about 76.9% (*n*-20) of male physicians were fully satisfied. While using Wasfaty service difficulty, female to male physicians’ response as “yes” was 45.5% (*n*-5) and

54.5% (*n*-6), respectively. Regarding the Wasfaty service reduced waiting time variable, about 80% (*n*-24) of male physicians gave a response (Table 4).

In the study population, univariate analysis was done among means ± SD of satisfaction categories with individual continuous variables like age, years of experience of physicians, consultation time, and prescription time for the patients. ANOVA (F) test was applied and found there was no significant difference between the above continuous variables with Wasfaty satisfaction categories.

In the current study, the same continuous variables were adjusted and developed a model for the application of multi-nominal regression analysis with Wasfaty satisfaction categories. Where we kept the reference category as not satisfied Wasfaty. Increase prescription time was significantly associated with the fully satisfied statement of physicians with Wasfaty (odds ratio –0.577, *p* = 0.014, CI –0.372 to 0.894.). Age was also closely associated with being fully satisfied Wasfaty (odds ratio –1.366, *p* = 0.050, CI –1.0 to 1.871) (Table 5).

In the study population, 158 responses from 131 physicians were noted under the Wasfaty difficulties question. About 34.8% (*n*-55) of physicians gave opinions on internet problems, 26.6% (*n*-42) as more options available for medication, and 10.6% (*n*-17) were mentioned as diagnosis problems in the current Wasfaty service. Closely, 8.2% (*n*-13) of physicians gave a response as difficulty in the reuse of prescriptions. Approximately, 20% of the physicians (*n*-31) mentioned other difficulties (Fig. 1).

**Table 2.** Opinions of physicians about Wasfaty service in the study population

Opinions of physicians	No (%)	Sometimes/average (%)	Yes (%)
Satisfied with Wasfaty service	11 (8.4)	94 (71.8)	26 (19.8)
Facing trouble while using Wasfaty	27 (20.6)	93 (71)	11 (8.4)
Filling of non-mandatory details in Wasfaty	42 (31.1)	49 (37.4)	40 (30.5)
Wasfaty reduced waiting time for the patient	70 (53.4)	31 (23.7)	30 (22.9)
Patients acceptance of utilization of Wasfaty	10 (7.6)	55 (42)	66 (50.4)
More options for medication availability at Wasfaty	21 (16)	48 (36.7)	62 (47.3)

**Table 3.** Opinions of physicians about patients' perspectives in relation to the availability of Medicines in Wasfaty service in the study group

Opinions of physicians	No (%)	Sometimes/average (%)	Yes (%)
Any patient returns back with complete non-availability of medicines (n-131)	26 (19.8)	34 (26.0)	71 (54.2)
Patients returned back to you with partial availability of medicine at Pharmacies (n-128)	5 (3.8)	30 (22.9)	93 (71)
Any patient visited more than 1 pharmacy to take his/her medicine (n-129)	3 (2.3)	17 (13)	109 (83.2)

**Table 4.** Some demographic variables associations with Wasfaty service components in the study group

Variables	Female physicians, n (%)	Male physicians, n (%)	Total, n (%)	p value, n (%)
Wasfaty fully satisfied	6 (23.1)	20 (76.9)	26 (100)	$\chi^2 = 0.797$ , 2 df, $p = 0.671$
Wasfaty sometimes satisfied	30 (31.9)	64 (68.1)	94 (100)	
Not satisfied Wasfaty	3 (27.3)	8 (72.7)	11 (100)	
Facing difficulty while using the Wasfaty – yes	5 (45.5)	6 (54.5)	11 (100)	$\chi^2 = 1.441$ , 2 df, $p = 0.487$
Facing difficulty while using the Wasfaty – no	8 (29.6)	19 (70.4)	27 (100)	
Facing difficulty while using the Wasfaty – sometimes	26 (28)	67 (72)	93 (100)	
Wasfaty reduced waiting time – yes	6 (20)	24 (80)	30 (100)	$\chi^2 = 1.946$ , 2 df, $p = 0.378$
Wasfaty reduced waiting time – neutral	11 (35.5)	20 (64.5)	31 (100)	
Wasfaty reduced waiting time – no	22 (31.4)	48 (68.6)	70 (100)	

Significant probability ( $p$ ) value  $\leq$  or  $=$  0.05;  $\chi^2$ ,  $\chi^2$  value; df, degree of freedom.

In the current study regarding suggestions for the improvement of the existing Wasfaty service, 135 responses were recorded from 131 physicians (some physicians gave more than 1 response). Approximately, 24.4% ( $n=33$ ) of physicians gave a response as to the addition of some important medications in the Wasfaty service. About 8.9% ( $n=12$ ) of physicians gave an opinion as a diagnosis writing option by the physician rather than a selection of diagnosis in the system availability. Closely one-third of the physicians (31.8%,  $n=43$ ) gave opinions as not applicable suggestions (not a valid suggestion) for Wasfaty improvement and other suggestions about 27.4% ( $n=37$ ) (Figure 2).

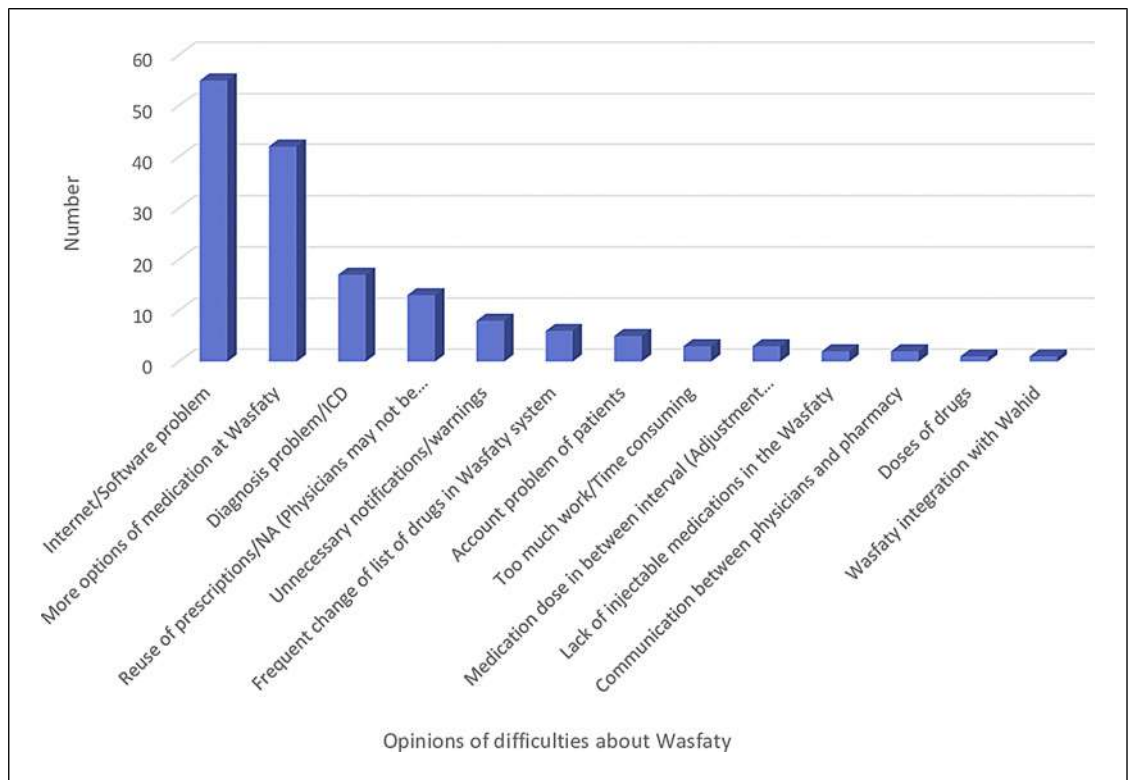
## Discussion

The current study aimed to identify some difficulties while prescription in the new system and also collected some opinions from the physicians working at the PHCCs to improve further in the existing health care settings. Introduction of Wasfaty service for an e-prescription to patients attending PHCC, a trendsetter for the implementation of digital health and it was a remarkable change as far as technology was concerned at the first contact level. During the phase of new technology into any systems, there were some initial problems that may occur this could be due

**Table 5.** Multi-nominal regression analysis of certain variables with Wasfaty service satisfaction in the study population

Satisfaction category	Variables	Adjusted OR	p value	Confidence interval
Average satisfied	Age	1.176	0.392	0.883 to 1.567
	Years of experience	0.905	0.582	0.634 to 1.292
	Consultation time	1.114	0.351	0.888 to 1.397
	Prescription time	0.915	0.356	0.757 to 1.105
Fully satisfied	Age	1.366	0.050	1.0 to 1.871
	Years of experience	0.783	0.228	0.527 to 1.165
	Consultation time	1.210	0.160	0.928 to 1.577
	Prescription time	0.577	0.014	0.372 to 0.894

OR, odds ratio.

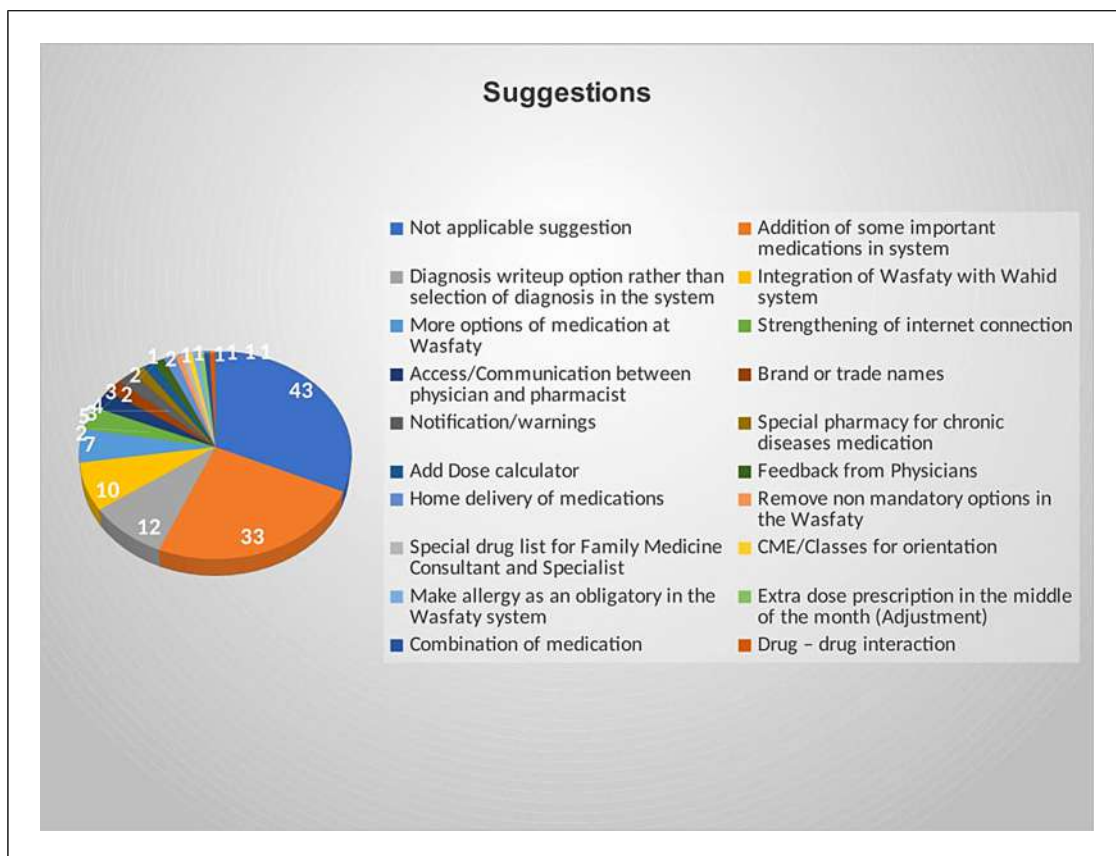


**Fig. 1.** Physicians' opinions about difficult situations while Wasfaty use at primary health care centers.

adoption of new technology from the physicians' point of view and some problems due to system or software problems including technical and internet connection issues.

There were many studies conducted in relation to different electronic systems used in the delivery of health care to the populations in many developed countries including in our Saudi Arabia, where rich in resources. Saudi Arabia started digital health transformation in 2018

onwards almost all the areas are covered from urban to rural areas including PHCCs to hospital levels to provide quality health services to the population and accountability aspects. Especially, electronic systems were very useful, where Saudi Arabia's adult literacy rate was close to 98 percent in 2020 [11]. As literacy was reported more in the population, there was the tendency of following smartphone messages and also the follow-up refills of medication will be easy.



**Fig. 2.** Suggestions of physicians to improve the existing Wasfaty system.

The USA started e-prescriptions to their patients through physicians in the year 2001 [12], Canada's electronic prescriptions were started in the year 2011 [13] and a bit of delay in the implementation of e-prescriptions to their patients, comparatively with USA [14]. In the European continent country, Sweden an e-prescription was introduced in the year 2014 [15, 16] and lastly usefulness of electronic prescriptions was demonstrated in British Columbia through PharmaNet to improve safety and support of medication [17]. This PharmaNet also connects physicians and pharmacists and it is useful for tracing patient medications between acute care and community settings [18].

This indicates that some developed countries and the majority of developing countries did not realize the importance of electronic prescriptions. Throughout the world the purchase of medication was gradually increased from developing countries to developed countries by the governments, and hence one of the national planning visions to minimize the cost as well as medication errors certain extent prevented through electronic prescriptions.

Over a period of time, some more countries to be included e-prescriptions in their patient's health systems.

In the present study, close to half of the physicians were Saudi nationals and the remaining expatriates of PHC physicians participated. Close to similar Saudi nationals proportion was observed in a study conducted in Saudi Arabia [19]. In the current study, almost 2/3rd of the study participants were males. Less female participation could be assumed not to access or cover female physicians' social media contacts or mobile numbers to share the questionnaire [20].

From the analysis point of view, the average satisfaction percentage was also taken as the satisfaction domain, and then the figure of satisfaction with Wasfaty touches 91.6% (71.8 + 19.8) and fewer PHCC physicians were not satisfied in the current study. Some of the studies conducted in Saudi Arabia about the new e-prescription system stated that the Wasfaty and its services were good for perceptions and beliefs, also about the concepts in the implementation of digital health in Saudi Arabia [9, 10].

Physicians' general opinions about patient perspectives domain, about close to half of the people return back to a physician with nonavailability of medication at the pharmacy, and nearly seven out of ten people with partial options of medication at the pharmacies. Almost four-fifths of the patients visited more than 1 pharmacy to take their prescriptions. This could be due to the coincidence wave of the COVID-19 pandemic and its prioritization strategy and also supply chain management issue. Also, observed during the COVID-19 pandemic time, a lot of disturbances happened in health and other departments including in many developed countries assumed more concentration and intention to control the pandemic. These perceptions need to be addressed and opinions are also mentioned on the day of data collection and their status was dynamic. We need to take opinions from the patients directly and also the opinions from the pharmacists in future studies to get a real and comprehensive picture. By this time, service might have improved and data collection time was different from the manuscript completion time.

In the international studies, the satisfaction of physicians about electronic prescriptions among Kuwait PHCC physicians was 85% [21], Ethiopia primary health care physicians mentioned in their study satisfaction level was 74.5% [22] also stated that internet access also plays a role in the satisfaction of physicians with the system. In another study conducted in the Middle East country and close to Saudi Arabia's geographical distribution, the satisfaction level with e-prescriptions in Jordan physicians was 74.7%, which was relatively low compared to our current study satisfaction was 91.6% [23]. Regarding electronic prescription in the Western world, countries conducted studies in Canada, Denmark, England, and Scotland revealed that electronic prescription was better than paper prescriptions and also mentioned physicians play a role in the advancement of knowledge while using electronic systems also emphasized that accountability of medicines and resource utilization was good with an e-prescription [24–27].

PHCC physicians' general perspectives about the open-ended question of any difficulty while using Wasfaty service, about one-tenth of (8.2%) of physicians mentioned difficulty as reuse of prescriptions which was not a real difficulty as per the Wasfaty service function concerned, due to non-aware of the Wasfaty service function used by some of the physicians. This reflects indirectly, the need for some periodical training to physicians about the same function and other aspects as a reinforcement of educational strategy.

In the current study, nearly one-fourth of physicians gave suggestions for the addition of some important medications in the Wasfaty service. A study conducted

in Saudi Arabia reported medication availability in Wasfaty service, showed less satisfaction, and was not mentioned in the form of a percentage [19]. A very less proportion of physicians gave the suggestion as communication between pharmacist and physician was required, only 3% were observed in our study. The studies conducted in Saudi Arabia in the years 2021 and 2022 revealed that communication between pharmacists and physicians was needed [19, 28]. Also supported the above statement of communication between pharmacist and physician was required as per a study mentioned in Canada for patient safety as well as medication error prevention [18]. Vision 2030 document, one of the strategies for the digital transformation program 2020 emphasized the greater utilization of e-health, digital transformation, and safety standards [4].

Some of the limitations in our study, during COVID-19 to maintain safety measures, data collection was completed through Google Forms and the response rate was low. In spite of repeated reminders given to physicians through social media and little less response was observed from the PHCC doctors in the study.

## Conclusions

Based on the study results, PHCC physicians' satisfaction with Wasfaty service is good (92%). But, little poor satisfaction perception with Wasfaty was observed by PHCC physicians about fewer options of medication at Wasfaty service, partial availability of medication at pharmacies, and patients visiting more than 1 pharmacy. About one-third of physicians revealed that they were having internet problems as a difficulty while using Wasfaty service. Approximately, one-tenth of the physicians suggested a diagnosis writing option rather than a selection of diagnoses in the existing Wasfaty service. Few physicians were not aware of the reuse of prescriptions in the Wasfaty service.

Some physicians suggested that the maximum dose of some medications, e.g., metformin dose we can give up to 2.25 g per day, but the system is allowing only 1,500 mg per day. The system must give a warning when we prescribe contraindicated medicines (e.g., Enalapril prescription in pregnancy).

As our study is a cross-sectional study and information is collected through electronic forms and also a self-administered questionnaire, need further studies are required to substantiate the present study findings. Our study was conducted among the primary health care physicians in Qassim province, generalizability of the



study findings to the whole of Saudi Arabia is not advisable and the current study will provide some light on existing Wasfaty service use in our province.

### Acknowledgments

We are thanking all our study participants (PHCC Physicians) for their active participation and their support to complete the study.

### Statement of Ethics

Data were collected after obtaining the Institutional Ethical Committee certificate from the Qassim Regional Ethics Committee in accordance with the National Bioethics Committee, KACST with approval number 607-43-3973. To our knowledge, no major ethical issues were involved in this research as we collected the general perceptions from the physicians. The authors gave importance to the participant data information and assured confidentiality of the individual information. Informed consent to participate was not directly obtained but inferred by the completion of the questionnaire.

### Conflict of Interest Statement

The authors declared that no conflicts of interest in relation to order of authors and publication.

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### Author Contributions

Mohammed Ahmed M. Hammad: first author and corresponding author, involved in study design, data collection, and manuscript writing. Chandra Sekhar Kalevaru: involved in study design, statistical analysis, and manuscript writing. Omer Al Yahia: contributed to the construction of the questionnaire and intellectual contribution to manuscript strengthening. Abdulaziz Almutairi: involved in questionnaire designing, manuscript writing, and editing. Faisal AlMogbel: involved in questionnaire design and statistical analysis writing and editing the article. Bandar Mohammad Abalkhail: contributed to manuscript strengthening (writing) and editing. Rand Albahli Albahli: involved in data collection, manuscript writing, editing, and results arrangement. All authors approved the final manuscript.

### Data Availability Statement

All data analyzed during the study are included in this article. Further inquiries can be directed to the corresponding author.

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