



جامعة الجميع الذكية
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College of Management

Master of Project Management

Patient's Satisfaction on the E-Prescription Provided in King Abdulaziz Medical City

-MNG-HA in Riyadh

رضا المرضى عن الخدمات الالكترونية للوصفات الطبية في مدينة الملك عبدالعزيز الطبية

بالشؤون الصحية بوزارة الحرس بالرياض

Role:	Member name	Academic ID
Team leader:	Talal Madwakh Abassafa	20222005525
Member:	Fahad Matook Alofi	20222006197
Member:	Qassim Altherwi	20212005059
Member:	Abdulaziz Nasser Aldakhil	20222006200
Member:	Hatan Fakri Radwan	20222005515
Member:	Ahmed Ali Ahmed	20222005654
Member:	Faris Ali Alghamdi	20222005785
Member:	Abdulrahman Ahmed Lafi	20222005822
Member:	Moeed Nimer Alotaibi	20212005200
Member:	Hatim Saeed Alghamdi	20222005653

Supervisor: Dr. Waleed Sulaiman

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الملخص:

هدفت الدراسة لقياس مدى رضا المرضى لاستخدام تطبيق الشئون الصحية بالحرس الوطني لإعادة صرف الدواء إلكترونياً. تم استدعاء بيانات ثانوية وتحليلها باستخدام التحليل الوصفي. مقياس ليكرت بخمس نقاط هو ما تم استخدامه في الاستبانة المستخدمة حيث أن رقم واحد يعني " راضي تماماً" و الرقم خمسة يمثل " جداً غير راضي". خمسة الاف وثمانمائة وخمس وخمسون استجابة للاستبيان الرقمي والمدمج في التطبيق تم جمعها للمستفيدين بمنطقة الرياض. تجاوز نسبة الاستجابة النصف من عدد طلبات إعادة صرف الدواء. ثلثي المستجيبين كانوا راضين عن التطبيق والخدمات المقدمة من خلاله.

Abstract:

This study is aimed to evaluate the patients' satisfaction in the pharmacy provided services by the application of The Health Affairs patients. A retrospective data retrieved and descriptive methodology utilized in this study. A Likert-scale of five points used in the survey where the "1" indicates " Extremely Satisfied" and "5" indicates " Very Dissatisfied". A total of 5855 respondents to electronic survey embedded to the portal out of beneficiaries utilized the portal of NGHHA in Riyadh. The respondents reached 57% of the total refill requests. Two third of the respondents (67%) were satisfied.

Introduction:

For physicians to communicate their decisions regarding drug therapy and for pharmacists to dispense medications, handwritten prescriptions have long been the favored means of communication (Hellström et al., 2009). It is regarded as a helpful tool for patients on how to utilize the medication to get the most benefit utilizing the technology which is called commonly electronic prescription (Byrne et al., 2010). Electronic prescription is “a broad term that means using the computer devices to enter, modify, review, and generate or transmit medicine prescriptions that prepare two-way transmissions between the point of care and the dispenser” (Bell et al., 2004). E-prescribing is also defined as “the direct computer-to-computer transmission of electronic prescriptions (e-prescriptions) from the prescriber office to community pharmacies” (Odukoya & Chui, 2012). E-prescribing is where technology is utilized to cross the time, geographic, and crowd barriers between providers and patients to get the medications to the patients. The government–private partnerships that were given more attention in the Saudi 2030 Vision plan played a significant role in this change. Only Saudi pharmacists who have registered with the Saudi Commission for Healthcare Specialties, which issues licenses to healthcare professionals, are permitted to own pharmacies, and the pharmacies must run by them (Almaghaslah et al., 2021). Typically, one to two pharmacists, or a pharmacist and an assistant, run community pharmacies. The government agency in charge of overseeing pharmacies is the Ministry of Health (الصحة, n.d.). Other governmental agencies provide pharmaceutical services in the Kingdom of Saudi Arabia, and The Ministry of National Guard - Health Affairs one of the well-known in the healthcare sector. Five current hospitals and medical city, and multiple primary healthcare centers in different sizes spread over the geographical cascade of the kingdom (About MNGHA, n.d.). The Health Affairs organizations serve the employees of the ministry and their dependents in all levels of healthcare services. Other beneficiaries are served nationally and internationally (About MNGHA, n.d.). The Health Affairs implement unified electronic medical record and adopted technology solutions in many of the

provided services to enhance the accessibility of these services. As one of those electronic prescriptions where the patients can request their medications through the Patient Care Application(*About MNGHA*, n.d.). That application creates access for the patient with various services such as evaluating the provided services and others are planned to achieve in the future to be added.

The healthcare system in Saudi Arabia has changed drastically in the last few years(Almaghaslah et al., 2021). Among various electronic health solutions to process health-related data in the last ten years, electronic prescription has always been a focus of interest. The pharmaceutical services one of the main services that most of the patients go through their journey. The service of pharmacy has burden of negative perceptions due to many aspects such as waiting time, unclear physicians hand writing, unavailable medications, insufficient information, traveling to get refill, and more. The technology is giving chance to go over some of these challenges and enhance the patient experience positively. Therefore, the e-prescription has implemented in many healthcare organizations and the feedback of the patients prospective is required to seek improvement opportunities to gain further level of patients positive experiences. The assessment of the patient satisfaction in The Health Affairs has not been addressed in the previous studies. This study is aimed to evaluate the patients' satisfaction in the pharmacy provided services by the application of The Health Affairs patients. Hence, following the recent implementation of the Patient Care Application in The Health Affairs, a patient satisfaction assessment will assess the service of various socio-demographic variables and geographical variables and further enhancement the provided service. To the best of our knowledge, this is the first study to evaluate the Patient Care Application in The King Abdulaziz Medical City in Riyadh that operate in Ministry of National Guard- Health Affairs.

Literature review:

Electronic prescription systems have been designed and implemented according to the domestic needs of each country, and different standards are also established to make it better every year. Electronic prescription has been discussed in many experts' reports and public national plans,

and it is tested, implemented, or are implemented in several European and the United States countries(Ahmadi et al., 2014; Ekedahl, 2010; Smith, 2005)12/16/22 10:36:00 PM. Several benefits were identified with the use of the electronic prescription solution (EPS), including the fact that electronic prescriptions are accurate, complete, and readable, which reduces the chance of dispensing errors and omissions. It provides higher levels of security, regulates the repeat dispensing workload enabling patients to collect their medication on time, is a convenience to the patients since they do not have to wait for the paper prescription to be dispensed, and opens two-way communication between the prescriber and the pharmacist, allowing pharmacists to be more involved in patient-centered care(Odukoya & Chui, 2012). On the other hand, EPS is also associated with delays in receiving prescriptions and inaccurate prescriptions from physicians. An overwhelming number of prescriptions with unclear information may lead to delays in dispensing. A lack of formal training also affects the speed of dispensing(Odukoya & Chui, 2012). A nationwide patient satisfaction survey assessing the newly implemented e-prescriptions system in Finland reported high satisfaction levels (Lämsä et al., 2018). Similarly, a country-level evaluation of e-prescriptions in Sweden indicated that patients had a positive attitude towards e-prescribing, found e-prescribing to be safe and beneficial, and enabled a faster dispensing process(Hammar et al., 2011). Another Brazilian study have concluded that replacing hand written prescriptions with e-prescribing would have several benefits (Mendonça et al., 2010). In 2018, an e-prescribing system called Wasfaty was launched in the government healthcare centers at both primary and secondary levels. The study concluded that no difficulties were encountered in purchasing medications, renewing prescriptions, or acting on behalf of someone in the pharmacy (Alqahtani, 2021). The benefit and satisfaction assessments are positive. In the Finnish study, ninety-five percent are satisfied of e-prescription(Lämsä et al., 2018). Another study in Finland, eighty-three percent are happy regarding receive sufficient prescription information through e-prescription. While in the Swedish research, patients' who have positive attitude toward e-prescription are 85%(Hammar et al., 2011). Another study from Poland state the satisfaction of patients score 72%(Wrzosek et al., 2021). Satisfaction of

e-prescription score 77% in Tukey study where patients prefer it for many stated reasons(Bulut et al., 2018). In another study in Saudi Arabia, the patients are very satisfied in their experience with Wasfaty (e-prescription)(Alqahtani, 2021).

Research methodology:

The study will use a retrospective data. The retrospective data was statistically investigated with excel. Descriptive methodology is used to analysis the data. The scope of the study is the patients who served and got their medication utilizing The Patient Care Application in the Ministry of National Guard - Health Affairs (NGHA) in the Kingdom of Saudi Arabia during the period between July to September - 2022.

Results:

The data of satisfaction on the portal that serve the pharmacy was extracted from the second handed data where were collected to seek their feedback on the services provided through the portal. The refill requests during the determined period were 10255 requests during the third quarter of 2022. The majority were female presenting 52 percent of the beneficiaries. Almost all patients utilized the portal were cetezins. The age categories are distributed as 11%, 19%, 30% and 40% for the age groups less than 20, 21 to 40, 41 to 60, and above 60 years old respectively. The pharmacies in the hospital sittings provided 81 % compare to 19% precents of prescription received refill requests through NGHA portal in the primary healthcare sittings. The refill medications could be picked up in drive thro pharmacy located outside the hospital when the patients received messages confirm the readiness of the requested medications to be, or deliver by contracted approved transportation companies to where the patient preferences. On the third quarter of 2022 a total of 5855 respondents to electronic survey embedded to the portal out of beneficiaries utilized the portal of NGHA in Riyadh. The respondents reached 57% of the total refill requests. Two third of the respondents (67%) were satisfied. The satisfaction average on ease of access to the required

services was 2.23 where skewed toward fairly satisfied. In the access dimension, the majority (56%) were extremely satisfied while, 11% were fairly satisfied, 7% were natural, 4% were somewhat dissatisfied, and 21% were very dissatisfied. Quality of the services provided satisfaction scored average was 2.37, skewed toward fairly satisfied. Those who were extremely satisfied, fairly satisfied, natural, somewhat dissatisfied, and very dissatisfied reached 52%, 11%, 8%, 5%, and 23% respectively. Another dimension, was electric services provided through the portal meet your needs that skewed toward fairly satisfied as well with average score 2.39. Almost two-third of them were satisfied where 52% were extremely satisfied and 11% were fairly satisfied, While 8% of them were natural, 5% were somewhat satisfied, and 24% were very dissatisfied. According to the useful of the provided information through the portal, the respondents scored average of 2.34. The average score was skewed toward fairly satisfied. In the percentage of the Likert scale for this attribute were 52%, 12%, 9%, 5%, and 22% respectively for the extremely satisfied, fairly satisfied, natural, somewhat dissatisfied, and very dissatisfied.

Discussion:

This study found that the patients who utilizing NGHHA portal to order and receive refill medications was moderate satisfied. Previous researches reported similarly positive satisfaction on electronic prescriptions worldwide. The highest level of satisfaction was (67%) on "design and ease of access". Quality of services, meet the need, and provided information were all close to the highest dimension with percentage (63%).

The satisfaction levels worldwide were higher than the results reported in this study. Therefore, portal has dissatisfaction feedback on those dimensions as well up to 29% of the respondents. Those portion is required to study to enhance the services. Further studies suggested to overcome the study limitations. Those limitation, The data were not linked to each patients due to authorization access is not granted yet, that limit the research to investigate the association between the demographic and geographic information with level of satisfaction. Furthermore, The survey doesn't tackle the time, deliveries, and availabilities of medications variables.

Conclusion:

The study concluded that the satisfaction of patients was positive toward the NGHHA portal (e-prescription) on refill their medication. The study included hospitals and primary healthcare centers in utilizing e-prescription to provide services to the patients through. All aspects included in the survey were almost same positive feedback. Yet the level on other global studies were better, the adopting such a technologies expected to face some challenges in both side the providers and the beneficiaries.

References:

1. *About MNGHA*. (n.d.). Retrieved November 3, 2022, from <https://www.ngha.med.sa/English/AboutNGHA/Pages/default.aspx>
2. Ahmadi, M., Samadbeik, M., & Sadoughi, F. (2014). Modeling of Outpatient Prescribing Process in Iran: A Gateway Toward Electronic Prescribing System. *Iranian Journal of Pharmaceutical Research : IJPR*, 13(2), 725–738.
3. Almaghaslah, D., Alsayari, A., Almanasef, M., & Asiri, A. (2021). A Cross-Sectional Study on Pharmacy Students' Career Choices in the Light of Saudi Vision 2030: Will Community Pharmacy Continue to Be the Most Promising, but Least Preferred, Sector? *International Journal of Environmental Research and Public Health*, 18(9), 4589. <https://doi.org/10.3390/ijerph18094589>
4. Alqahtani, S. S. (2021). Community Pharmacists' Opinions towards Poor Prescription Writing in Jazan, Saudi Arabia. *Healthcare*, 9(8), 1077. <https://doi.org/10.3390/healthcare9081077>
5. Bell, D. S., Cretin, S., Marken, R. S., & Landman, A. B. (2004). A Conceptual Framework for Evaluating Outpatient Electronic Prescribing Systems Based on Their Functional Capabilities. *Journal of the American Medical Informatics Association : JAMIA*, 11(1), 60–70. <https://doi.org/10.1197/jamia.M1374>
6. Bulut, S., Yıldız, A., & Kaya, S. (2018). Evaluation of Transition to Electronic Prescriptions in Turkey: Perspective of Family Physicians. *International Journal of Health Policy and Management*, 8(1), 40–48. <https://doi.org/10.15171/ijhpm.2018.89>
7. Byrne, C. M., Mercincavage, L. M., Pan, E. C., Vincent, A. G., Johnston, D. S., & Middleton, B. (2010). The Value From Investments In Health Information Technology At The U.S. Department Of Veterans Affairs. *Health Affairs*, 29(4), 629–638. <https://doi.org/10.1377/hlthaff.2010.0119>
8. Ekedahl, A. (2010). Problem prescriptions in Sweden necessitating contact with the

- prescriber before dispensing. *Research in Social & Administrative Pharmacy: RSAP*, 6(3), 174–184. <https://doi.org/10.1016/j.sapharm.2009.09.001>
9. Hammar, T., Nyström, S., Petersson, G., Åstrand, B., & Rydberg, T. (2011). Patients satisfied with e-prescribing in Sweden: A survey of a nationwide implementation. *Journal of Pharmaceutical Health Services Research*, 2(2), 97–105. <https://doi.org/10.1111/j.1759-8893.2011.00040.x>
 10. Hellström, L., Waern, K., Montelius, E., Åstrand, B., Rydberg, T., & Petersson, G. (2009). Physicians' attitudes towards ePrescribing – evaluation of a Swedish full-scale implementation. *BMC Medical Informatics and Decision Making*, 9, 37. <https://doi.org/10.1186/1472-6947-9-37>
 11. Lämsä, E., Timonen, J., & Ahonen, R. (2018). Pharmacy Customers' Experiences With Electronic Prescriptions: Cross-Sectional Survey on Nationwide Implementation in Finland. *Journal of Medical Internet Research*, 20(2), e68. <https://doi.org/10.2196/jmir.9367>
 12. Mendonça, J. M. D., Lyra, D. P., Rabelo, J. S., Siqueira, J. S., Balisa-Rocha, B. J., Gimenes, F. R. E., & Bonjardim, L. R. (2010). Analysis and detection of dental prescribing errors at primary health care units in Brazil. *Pharmacy World & Science: PWS*, 32(1), 30–35. <https://doi.org/10.1007/s11096-009-9335-7>
 13. Odukoya, O. K., & Chui, M. A. (2012). Relationship between e-prescriptions and community pharmacy workflow. *Journal of the American Pharmacists Association: JAPhA*, 52(6), e168-174. <https://doi.org/10.1331/JAPhA.2012.12066>
 14. Smith, J. A. (2005). Role of computerized physician order entry systems in facilitating medication errors. *The Journal of Urology*, 174(4 Pt 1), 1400–1401.
 15. Wrzosek, N., Zimmermann, A., & Balwicki, Ł. (2021). A Survey of Patients' Opinions and Preferences on the Use of E-Prescriptions in Poland. *International Journal of Environmental Research and Public Health*, 18(18), 9769. <https://doi.org/10.3390/ijerph18189769>
 16. الصحة, ف. ب. و. (n.d.). *Ministry Of Health Saudi Arabia*. Ministry Of Health Saudi Arabia.

