



Patient Experience with Non-Clinical Aspects of Virtual Clinics: Beyond User Experience Design

Malak Baslyman, PhD

Interdisciplinary Research Center of Finance and Digital Economy

King Fahd University of Petroleum & Minerals

Dhahran, Saudi Arabia

email: malak.baslyman@kfupm.edu.sa

Introduction

- ▶ The rapid implementation of digital health transformation and the wide adoption of virtual clinics applications lead to new concepts called Patient Experience (PX) and Digital Patient Experience (DPX).
- ▶ The factors that influence are clinical and non-clinical aspects
- ▶ Most studies conducted to evaluate PX and DPX with virtual clinics focused on evaluating the technical part of virtual clinics (usability and user interaction).
- ▶ There is a paucity of literature that evaluate the non-clinical aspects of virtual clinics, such as communication with doctors, information availability, and medicines explanations.

Research objectives

This study attempted to achieve the following objectives:

- ▶ evaluate PX regarding the non-clinical aspects when using virtual clinics
- ▶ Bring multiple perspectives of users (patients, physicians, and software engineers) about:
 1. the non-clinical aspects of virtual clinics
 2. how to improve the non-clinical aspects of virtual clinics
 3. the overall PX when using virtual clinics

Research methodology - Survey

- ▶ This study customized and utilized **Hospital Consumer Assessment of Healthcare Providers and Systems** (HCAHPS) survey.
- ▶ HCAHPS survey covers all relevant non-clinical aspects to the virtual clinics (*communication with doctors, pain management, communication about medicines, discharge information, and transition of care*).
- ▶ The survey was distributed by email invitations.
- ▶ 20 complete responses were received.
- ▶ All participants used virtual clinic applications at least once.
- ▶ Most of the participants have more than 4-year college degree.
- ▶ All participants are in an excellent or a good state of health and mental health.

Research methodology - Focus group

- ▶ The focus group session brought rich and diverse perspectives of patients, physicians, and software development experts about the following topics:
 - ▶ **Motivations of using virtual clinics:** what are the motivations for using virtual clinics instead of actual visits?
 - ▶ **Communication - Doctors' Respect and courtesy:** how patients evaluate it and it could be enhanced.
 - ▶ **Data and information availability:** what are the data and information that are important to have available all time and what is the best way to present it?
 - ▶ **Medicines and symptoms:** what is the best way to get information on medicines and patient symptoms? Health conditions explanations
 - ▶ **Follow ups:** what is the best way to get follow-ups?
 - ▶ **Absence of nurse role:** does it impact the experience negatively or positively?
 - ▶ **Overall improvements:** How to improve overall patient experience of non-clinical aspects when using virtual clinics?
- ▶ The session lasted for an hour. The participants in the session are four patients, a software development expert, and a physician.

Survey result - *Patient satisfaction regarding non-clinical aspects*

1. *Communication with doctors:*

Communication with doctors	Always	Usually	Sometimes	Never
During the virtual consultations, how often did doctors treat you with courtesy and respect?	12	4	4	0
During the virtual consultations, how often did doctors always listen carefully to you?	9	6	5	0
During the virtual consultations, how often did doctors explain to you things in a way you could understand?	6	6	2	2

2. *Experience during the virtual clinics: Medication Explanation*

Experience during the virtual clinics: Medication Explanation	Yes	No		
During the virtual consultations, were you given any medicine that you had not taken before?	11	9		
	Always	Often	Sometimes	Never
Before giving you any new medicine, how often did doctors in virtual clinics tell you what the medicine was for?	4	6	6	4
Before giving you any new medicine, how often did doctors in virtual clinics describe possible side effects in a way you could understand?	3	3	8	6

Result: *Patient satisfaction regarding non-clinical aspects (cont.)*

3. Experience after leaving the virtual clinics: Information availability and understanding the patient care:

Experience after leaving the virtual clinics: Information availability and understanding the patient care	Strongly agree	Agree	Disagree	Strongly disagree
When I left the virtual consultation, I had a good understanding of the things I was responsible for in managing my health.	3	13	2	2
When I left the virtual consultations, I clearly understood the purpose for taking each of my medications.	3	10	2	2
	Yes		No	
After the virtual consultations, did doctors, or other virtual clinics staff talk with you about whether you would have the help you needed when you left the virtual consultations?	5		15	
During or after the virtual consultations, did you get information in writing about what symptoms or health problems to look out for after you left the virtual clinics?	7		13	

Result: *Patient satisfaction regarding non-clinical aspects (cont.)*

4. *Overall experience with virtual clinics:*

Overall experience with virtual clinics	definitely yes	probably yes	probably no	definitely no
Would you recommend this virtual clinics over actual hospital to your friends and family?	6	7	5	2
	Strongly agree	Agree	Disagree	Strongly disagree
During the virtual consultation, doctors took my preferences and those of my family or caregiver into account in deciding what my health care needs would be when I left.	2	7	6	3

Focus group session result

- ▶ Summary of the recommendations of the participants in the focus group session:

Participant	Recommendation
Patient	<ul style="list-style-type: none">• Read patient health record before the consultation• physicians should use video calls, make eye contact, and use appropriate voice tone• provide a report of patient health symptoms, diagnosis, and medicines• use chatbots to interact with patients before and after the virtual consultations• effective human communication with empathy should be incorporated into the design of virtual clinics• trust and human values should be a part of the virtual clinics' design• a family member should be allowed to attend the virtual consultations• have evaluation records for each healthcare provider to be viewed by patients• a short video of the bio and experience of the healthcare providers could be provided to patients
Technical expert	<ul style="list-style-type: none">• have all medicines, their explanations, and side effects available online after the consultation session• Use chatbots to answer the patients' questions about medications
Physician	<ul style="list-style-type: none">• technologies should be designed to suit all ages of patients with different educational backgrounds• provide new performance evaluation metrics for virtual clinics that captures the quality of services not quantity only.

Discussion

- ▶ With the absence of standardized evaluation tools for patient satisfaction with non-clinical aspects of virtual clinics, we found an opportunity to explore the use of HCAHPS tool in evaluating patient satisfaction with virtual clinics.
- ▶ Most of the participants who mentioned that they were not given a new medication, used virtual clinics for follow-ups and medication refills.
- ▶ Participants who have a positive experience with the medication explanations during the virtual clinics share the same opinion as other participants that the side effects of the medications were not explained to them.
- ▶ The result of the survey and the focus group confirmed that information availability is a big issue as it received the most negative reactions among all non-clinical aspects.

Limitations

- ▶ The validity of using the HCAHPS survey in the context of virtual clinics is not validated yet. In addition, the size of participants
- ▶ The survey and the focus group session is small, hence, the results of this study could not be generalized.
- ▶ The focus was on non-clinical aspects of virtual clinics with the exclusion of the technical part evaluation, such as user interface design, which may impact the analysis of the results and the participants' reactions.

Future work

- ▶ We plan to evaluate the validity and reliability of the customized version of HCAHPS survey in evaluating patient satisfaction with virtual clinics.
- ▶ A larger sample of participants will be recruited to ensure that the finding is generalizable and valid.
- ▶ We plan to employ the design thinking approach with multi-perspectives participants to generate and evaluate new solutions in terms of enhancing patient experience with virtual clinics.

Conclusion

- ▶ This study attempts to evaluate patient satisfaction and experience with non-clinical aspects of virtual clinics.
- ▶ HCAHPS survey was customized and used to evaluate patient satisfaction, while a multi-perspective focus group session was conducted to explore how to enhance patient experience about non-clinical aspects.
- ▶ The survey findings showed that patients have a positive reaction toward non-clinical aspects of virtual clinics.
- ▶ The major issue was related to the information availability of patient health records, medication explanations, and receiving support after the end of the virtual consultations.
- ▶ In the focus group session, the participants illustrated acceptance of solving some existing issues by chatbots or other technology-related solutions.
- ▶ They also highlighted the need to improve human interaction and communication and to integrate human values into the design of virtual clinic applications.