

## Comparison between the impact of virtual clinic versus face-to-face outpatient clinic on post breast cancer surgeries patients at the Physical Rehabilitation Department.

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### Abstract:

**Background:** COVID-19 has caused unprecedented societal turmoil, triggering a rapid, still ongoing, transformation of healthcare providers on a global level. In this new landscape, it is highly important to acknowledge the challenges this pandemic poses to the care of cancer patients. Physical rehabilitation services are very important for post-breast cancer surgeries patients in order to improve shoulder range of motion, muscle power, recovery of patient's functional abilities and improving their quality of life. In this way, many post-breast cancer surgeries patients in the acute phase of COVID-19, need to continue their physical rehabilitation program.

**Aims:** Compare the effectiveness of virtual clinic (VC) with face to face (FTF) clinics in the assessment and progression of post-breast cancer surgeries patients in Saudi Arabia and understand patient's perception of virtual clinics as an alternative acceptable method in serving and supporting their needs.

**Patients and Methods:** Surveys were disseminated to the patients through WHATSAPP. A subset of patients who had breast cancer surgery will be recruited to follow-up either in a VC or in FTF clinics. The fifty-three patients will be assigned to continue their physical therapy follow-up at the time of their discharge from the hospital for at least two sessions, to enable the therapist to assess them, take the proper measurement, and check their activity of daily living. A total of (n=53) patients were divided according to their ability either to continue at the FTF clinic or VC for 5 sessions, the verbal consent was taken. On session number five all patients were seen on FTF clinic to complete the survey questionnaires and for re-assessment to compare the results.

**Results:** 53 patients completed the survey. Twenty-seven patients in the VC and twenty-six patients at the FTF clinic. Patients in the FTF clinic had higher satisfaction ratings with the services provided to them by 14.7% compared to patients in the VC group, and 10% higher at the overall perception as very satisfied.

100% of patients were satisfied with the therapist who provides the service in the two groups, 75.9% of patients were satisfied overall with the clinic. Generally, patients showed preference for face to face in future visits to the service after the pandemic.

**Conclusion:** Our data clearly demonstrated that FTF clinics are superior to VC, despite that virtual clinic can be rapidly implemented in response to Covid-19 pandemic. In this study, patients were very satisfied with the virtual clinic to prevent any further complications after the surgery.

**Keywords:** virtual clinic, breast surgery, physical therapy, survey questionnaires.

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### I. Introduction:

Since November 2019, the COVID-19 pandemic has affected all aspects of our lives worldwide. This unparalleled health crisis <sup>(1)</sup>, for which no healthcare system was fully prepared, has caused a tremendous strain in healthcare services <sup>(2)</sup>, affecting directly and indirectly the course and treatment of many common illnesses <sup>(3)</sup>. Oncology patients have been particularly affected, since they are regarded as a highly vulnerable group in the current pandemic, due to their immunocompromised status caused by both cancer and various anticancer treatments <sup>(4,5)</sup>. There are two recent studies demonstrated that patients with cancer are at an increased risk of more severe infection and subsequent complications, particularly if surgery or chemotherapy are performed within the month preceding SARS-Cov-2, while an underlying cancer diagnosis is associated with an increased risk of death and/or intensive care unit (ICU) admission <sup>(6,7)</sup>. Physical attendance at outpatient clinics increases patient's risk of attracting and spreading COVID-19. Virtual clinic (VC) is an important way for patients to access their care without this risk <sup>(8,9)</sup>.

Additionally, virtual clinics are not a new concept. There are reports which indicate that virtual clinics may have begun in the 1950's<sup>(10)</sup>, with the popularity of telehealth as it is known today beginning to grow in the 1970's<sup>(11)</sup>. The definition of a virtual clinic is a planned contact by a healthcare professional with a patient for the purposes of clinical consultation, assessment, monitoring/management of healthcare conditions, provision of advice, and/or treatment planning. A virtual consultation can be delivered via telephone and/or video ensuring the use of approved, secure technology. Providers should ensure that virtual clinics are only used for tasks that are clinically appropriate for delivery through this medium and do not compromise patient care<sup>(9)</sup>.

### **Rationale of the Study**

As physiotherapists working with female post breast cancer surgeries patients at King Faisal Specialist Hospital and Research Center (KFSH&RC) Riyadh, Saudi Arabia our main concern is to provide a high quality of care for this group of patients. This concern stimulated our interest in helping them during the pandemic in a safe way by introducing the VC and compare their impact on patients Versus the face to face (FTF) clinics. However, to date, no research has been published which has compared the impact of VC versus FTF outpatient clinics on post breast cancer surgeries patients in the physical rehabilitation field in Saudi Society. Information for the study will be collected using survey questionnaires.

**Methodology:** Prospective study.

## **II. Methods:**

The objective of this prospective study was to compare the potential benefits and drawbacks of a VC system versus FTF clinics at the Physical Rehabilitation Department at KFSH&RC – Riyadh, Saudi Arabia. Metrics included the following: (1) prospective patient attitudes to the concept of VC; (2) a description of the efficiency of FTF outpatient care as compared with VCs in terms of patients meet their needs; and efficiency of treatment methods. A survey was drafted with 10 questions (Appendix 1). Questions 1-2 demographic data, question 3 if the patient used VC before or not, questions 4-5 about the quality of VC technical issues, question 6 rating the therapist attitude and behavior, question 7 &8 the patient perspective about this technology, and Question 9&10 to rate the care of the physical therapy through VC, with the space at the end of the survey for patients to give their opinion. The modification was organized to other survey questionnaires that were distributed to the patient who attended the FTF clinic such as erased the questions about the quality of VC technical issues.

Patient satisfaction was assessed with the use of ordinal questions, i.e., answers were given on a Likert scale from 1(strongly agree) to 5 (strongly disagree). Surveys were disseminated to the patients through WHATSAPP. A subset of patients who had breast cancer surgery will be recruited to follow-up either in a VC or in FTF clinic. The fifty-three patients will be assigned to continue their physical therapy follow-up at the time of their discharge from the hospital for at least two sessions, to enable the therapist to assess them, take the proper measurement, and check their activity of daily living. Patients were divided according to their ability either to continue at the FTF clinic or VC, total (n=53). For the total of 5 sessions, on session number five all the patients were seen at the FTF clinic to complete the survey questionnaires and for re-assessment to compare the results.

### **2.1- Sample Size/ Inclusion and exclusion criteria:**

Sample size was 53 women with main age of 45.8 years old. Inclusion criteria were female who undergone breast cancer surgeries, at any stage of cancer treatment, had strong Wi-Fi connections at home. Exclusion criteria were female with visual and speech deficit, neurological disorders, no/poor Wi-Fi connection at home.

## **III. Results:**

A total of 53 patients were recruited for this study, all of them were eligible for inclusion. After the verbal consent was obtained, 27 were selected to VC follow-up and 26 to FTF outpatient clinic depending on their ability either to continue at the FTF clinic or VC at that time.

The virtual clinic was conducted successfully with 27 patients as well as the FTF clinic with 26 patients. Twenty-two patients participated at the virtual clinic before this experience while five of them this was their first experience. Patients in the FTF clinic had higher satisfaction ratings with services provided to them by 14.7%, and 10% higher at the overall perception as very satisfied. While had equal therapist rating 100% very satisfied with the therapist service. The VC group rated the quality of VC technical issues as 83.4% very satisfied, 7.4% good, 1.8% poor, and 7.4% terrible. The patient's perspective about this technology were 81.5% very satisfied, 7.4% good, 3.7% average, 3.7% poor and 3.7% terrible. Rated the care of the physical therapy through VC and recommended it to others 75.9% very satisfied, 7.5% good, and 7.5% average, 3.6% poor, and 5.5% terrible. See Table 1&2

**Table 1:** The survey questionnaires for VC.

	1= Excellent	2= Good	3= Average	4= Poor	5= Terrible	6= N/A
3- Are you satisfied with the services provided by the physical virtual clinic?	22	3		1	1	
4- Audio Quality	22	3			2	
5- Video quality	23	1		1	2	
6- Therapist rating	27					
7- Ease of using technology.	22	2	1	1	1	
8- Would you use it again?	19	2	3	1	2	
9- From your experience. Do you recommend Virtual physical therapy to others?	21	1	3		2	
10- Overall perception, virtual physical therapy clinic met all needs. e.g. Designed goals, verbal education is given, and satisfaction overall.	23	2		1	1	

**Table 2:** the survey questionnaires for the actual clinic.

	1= Excellent	2= Good	3= Average	4= Poor	5= Terrible	6= N/A
3- Are you satisfied with the services provided by the physical therapy at the actual clinic?	25	1				
4- Therapist rating	26					
5- Explanation of the physical therapy goals.	25	1				
6- Benefit derived from PT treatment.	24	2				
7- Educational materials are given. The instructions were helpful.	24	2				
8- Overall, I was satisfied with my experience with physical therapy	26					

Additionally, there were lots of excellent comments added from the two groups about the therapists who provided the service such as “very helpful therapist, excellent service and the therapist is very keen to explain the idea and to make sure that we understood it well, the therapist added a lot of effort to support the patient during the treatment journey, virtual clinic saving their time, virtual clinic beyond their expectations, the therapist is very patient, the virtual clinic is an excellent experience, only two out of 27 who attended the virtual clinic mentioned that the virtual clinic is good during the pandemic rather than that they prefer FTF clinic”. In conclusion, the virtual clinic had a high satisfaction score during the pandemic; however, beyond the Covid-19 pandemic virtual clinic would be preferred less than a FTF clinic. Furthermore, some of the patients reported that due to the current Covid-19 pandemic, the majority of the cancer patient’s post-surgery have seen face to face health checks changed or suspended to reduce the risk of infection from the virus, which might lead to deterioration in the patient’s condition, which could be reduced by introducing virtual clinic as a tool at this time of crisis. Specifically, in breast cancer, the early intervention and forward-facing models of physical therapy have proven to be effective in the reduction of post-operative breast cancer complications, and the experience of this study at KFSH&RC – Riyadh, Saudi Arabia showed it is possible to implement this model in the case of virtual clinic rehabilitation.

This study provided an overview of some of the potential reasons for high satisfaction among patients which included the following: reduce travel times, reduce waiting times, and reduce impact of travel on symptoms. Common reasons for poor satisfaction included the following: variable sound and picture quality, low confidence levels with using the technology.

#### IV. Discussion:

The virtual clinic communicated as an important way to manage patients during the Covid-19 pandemic by the leadership team at the organization. That goes in line with Greenhalgh et al <sup>(8)</sup> found that videoconferencing consultations appeared to work better when the patient is at high risk of infection, and when the patient and clinician knew each other, and found that the most challenging issue was the technical difficulties. The implementation of VC required a dedicated multidisciplinary team, expertise in information technology, and well-trained clinical staff. According to our experience as physical therapists at KFSH&RC – Riyadh, Saudi Arabia, this is the first study on VC implantation across Saudi Arabia organizations. The finding of this study will be of interest to healthcare organizations looking to optimize their services by adding option of VCs to patient during crisis times or for patient facing difficulties to attend face to face clinics for any reason.

Future research studies evaluating the effectiveness and acceptability of VCs are required, particularly as service returns to a “new normal” after Covid-19.

### V. Conclusion:

This study demonstrated that virtual clinic can be rapidly implemented in response to Covid-19 and that they are largely acceptable. Further initiatives are required to support clinically appropriate and acceptable virtual clinics beyond Covid-19.

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### Appendix 1

#### PATIENT SATISFACTION SURVEY (virtual clinic)

#### Dear patient:

The aim of this questionnaire is to evaluate the quality of virtual physical therapy services provided to you in order to continuously improve it to earn your satisfaction. Kindly, answer the questions that we will ask you

Date \_\_\_\_\_ Gender: Male / Female Age: \_\_\_\_\_

#### Was this your first experience with virtual physical /occupational therapy?

Please, rate the service:

	1= Excellent	2= Good	3= Average	4= Poor	5= Terrible	6= N/A
1. Are you satisfied with the services provided by the physical/occupational virtual clinic?						
2. Audio Quality						
3. Video quality						
4. Therapist rating						
5. Ease of using technology.						
6. Would you use it again.						
7. From your experience. Do you recommend Virtual physical/ occupational therapy to others.						
8.overall perception, virtual physical/ occupational therapy clinic met all needs.						

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**PATIENT SATISFACTION SURVEY (Actual clinic)**

**Dear patient:**

The aim of this questionnaire is to evaluate the quality of physical rehabilitation services provided to you in order to continuously improve it to earn your satisfaction. Kindly, answer the questions that we will ask you

Date \_\_\_\_\_

Age: \_\_\_\_\_

	1= Excellent	2= Good	3= Average	4= Poor	5= Terrible	6= N/A
1. Overall perception, virtual physical therapy clinic met all needs.						
2- Are you satisfied with the services provided by the physical therapy at the actual clinic?						
3- Therapist rating						
4- Explanation of the physical therapy goals.						
5. Benefit derived from PT treatment.						
6. Educational materials given. The instructions were helpful.						
7. overall, I was satisfied with my experience with physical therapy						

Comments: \_\_\_\_\_

\_\_\_\_\_

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