English

Adherence, satisfaction and experience of women in a physical therapy telemonitoring program after breast cancer: a qualitative-quantitative pilot study

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Submission date: November 19, 2021 | **Approval date:** December 22, 2021

Abstract

Objective: *To verify and compare the adherence, satisfaction, and experience of women in a telemonitoring program in physical therapy after breast cancer.* ***Method:*** *Quali-quantitative study with 10 participants, randomly allocated to synchronous and asynchronous telemonitoring groups. Adherence was assessed by the frequency of exercise performance. Satisfaction was assessed by two questions with a grade from 0 to 10, and experience, using open questions. Quantitative data were analyzed using the SPSS software and the interpretation of qualitative data through thematic analysis described by Braun and Clarke.* ***Results:*** *The adherence of the synchronous and asynchronous groups was 95.5% and 93.3%, respectively. The satisfaction of the synchronous group had an average of 9.8 and the asynchronous group had an average of 9.9. The experience of both groups was positively reported.* ***Conclusion:*** *According to this pilot study, post-breast cancer women showed a high rate of adherence, a high degree of satisfaction, and reports of positive experiences in a physical therapy telemonitoring program, both synchronous and asynchronous. Telemonitoring was a well-accepted modality among post-breast cancer treatment patients and can be performed not only during the Covid-19 pandemic but as a viable alternative for rehabilitation..*

Keywords: *Breast neoplasms; Treatment Adherence and Compliance; Patient satisfaction; Qualitative research; Telemonitoring.*

Resumen

Adherencia, satisfacción y experiencia de mujeres en un programa de teleseguimiento de fisioterapia tras cáncer de mama: un estudio piloto cualitativo-cuantitativo.

Objetivo: *Verificar y comparar la adherencia, satisfacción y experiencia de mujeres en un programa de telemonitorización en fisioterapia post-cáncer de mama.* ***Método:*** *Estudio cuali-cuantitativo con 10 participantes, asignados aleatoriamente a grupos de telemonitorización sincrónica y asincrónica. La adherencia se evaluó por la frecuencia del ejercicio. Satisfacción, mediante dos preguntas con nota de 0 a 10, y experiencia, mediante preguntas abiertas. Los datos cuantitativos se analizaron mediante el software SPSS y la interpretación de los datos cualitativos mediante el análisis temático descrito por Braun y Clarke.* ***Resultados:*** *La adherencia de los grupos sincrónico y asincrónico fue del 95,5% y 93,3%, respectivamente. La satisfacción del grupo sincrónico tuvo una media de 9,8 y el grupo asincrónico, una media de 9,9. La experiencia de ambos grupos se informó positivamente.* ***Conclusión:*** *De acuerdo con este estudio piloto, las mujeres post-cáncer de mama mostraron una alta tasa de adherencia, un alto grado de satisfacción y relatos de experiencias positivas en un programa de telemonitorización de fisioterapia, tanto sincrónica como asincrónica. La telemonitorización fue una modalidad bien aceptada entre las pacientes que han recibido tratamiento para el cáncer de mama y puede realizarse no solo durante la pandemia de Covid-19, sino como una alternativa viable para la rehabilitación.*

Palabras clave: *Neoplasias mamarias; Cumplimiento y Adherencia al Tratamiento; Satisfacción del paciente; Investigación cualitativa; Telemonitorización.*

Resumo

Adesão, satisfação e experiência de mulheres em um porgramam de telemonitoramento de fisioterapia pós câncer de mama: um estudo piloto quali-quantitativo.

Objetivo: *Verificar e comparar a adesão, satisfação e experiência de mulheres em programa de telemonitoramento em fisioterapia após o câncer de mama.* ***Método:*** *Estudo quali-quantitativo com 10 participantes, alocadas por meio de sorteio para os grupos de telemonitoramento síncrono e assíncrono. A adesão foi avaliada pela frequência de execução dos exercícios. A satisfação, por duas perguntas com graduação de 0 a 10, e a experiência, por meio de perguntas abertas. Os dados quantitativos foram analisados no software SPSS e a interpretação dos dados qualitativos por meio da análise temática descrita por Braun e Clarke.* ***Resultados:*** *A adesão dos grupos síncrono e assíncrono foi de 95,5% e 93,3%, respectivamente. A satisfação do grupo síncrono apresentou média de 9,8 e do grupo assíncrono, média de 9,9. A experiência de ambos os grupos foi relatada positivamente.* ***Conclusão:*** *De acordo com este estudo piloto, mulheres pós-câncer de mama demonstraram alta taxa de adesão, alto grau de satisfação e relatos de experiências positivas em programa de telemonitoramento fisioterapêutico, tanto síncrono, quanto assíncrono. O telemonitoramento foi uma modalidade bem aceita entre as pacientes pós-tratamento do câncer de mama e pode ser desempenhado não somente durante a pandemia da Covid-19, mas como uma alternativa viável de reabilitação.*

Palavras-chave: *Neoplasias da mama; Cooperação e Adesão ao Tratamento; Satisfação do paciente; Pesquisa qualitativa; Telemonitoramento.*

Introduction

Breast cancer is the most frequent neoplasm in the world with 2.26 million new cases in 2020[1]. Its treatment consists of surgery, chemotherapy, radiotherapy, hormone therapy, and immunotherapy, depending on the tumor stage and other clinical criteria[2,3]. However, it can bring physical-functional complications such as fibrosis, lymphedema, pain, fatigue, decreased shoulder range of motion, among others[2,4,5].

During the Covid-19 pandemic, cancer patients were categorized into priority levels for urgent care[6] and allocated to telehealth services[7], since they tend to develop serious outcomes when contaminated by the virus, while at the same time they need to maintain routine follow-up for diagnosis, assessment, and treatment[8].

The Federal Council of Physiotherapy and Occupational Therapy authorized non-face-to-face physiotherapeutic care through teleconsultation and telemonitoring. In this one, we can use synchronous and asynchronous methods, that is, any form of distance communication performed in real-time or not[9]. Although the results for the population with breast cancer are preliminary, they encourage the improvement of physical, emotional, and social problems[10].

The flexibility of care, increased monitoring frequency, reduced costs, encouragement of patient independence and lower absenteeism rates are some of the possible advantages of digital-physical therapy. However, disadvantages such as the impossibility of carrying out a complete evaluation, the limitation in the use of physiotherapeutic resources, and the risks during the execution of the exercises, are some of the barriers faced throughout the therapeutic process[11].

The effectiveness of telemonitoring depends on good adherence to treatment[12], that is, the patient's conduct with the health professional's guidelines[13]. Studies carried out with other populations have shown that the synchronous method has better adherence rates when compared to the asynchronous method[14] and that treatment attendance may be related to the degree of satisfaction with the modality[12].

With the advancement of telehealth, we need to determine the degree of satisfaction with the service provided[15]. In the current literature, such analysis usually uses quantitative instruments[16]. Therefore, we also expect to value the reports of experiences of the participants, which will allow a better understanding of the determinants of adherence and satisfaction, especially in this pandemic scenario. The analysis of experience is essential to identify acceptability and enrich knowledge about the telemonitoring modality[17], based on the end of chemotherapy and radiotherapy treatments, during the Covid-19 pandemic.

Therefore, this pilot study aims to verify and compare the adherence, satisfaction, and experience of women in a telemonitoring program, synchronous and asynchronous, after surgical treatment for breast cancer.

Method

This is a qualitative-quantitative pilot study, integrated into a larger, randomized, double-blind clinical trial study (evaluator and patient), registered and approved on the Clinical Trials platform under protocol number NCT04779450 and approved by the Research Ethics Committee with Human Beings (CEP- *Comitê de Ética em Pesquisa*) of the University of the State of Santa Catarina (UDESC), under approval protocol 4,487,100 (CAAE 39767120.3.0000.0118).

Women who met the following criteria were included in the study: between 18 and 75 years old; diagnosed with breast cancer and undergoing surgical treatment; completed radiotherapy and/or chemotherapy cycles; able to read, write, have access to the internet and a telephone number; understand and access mobile applications or live with someone who could help.

Exclusion criteria were: open wounds; acquired infections; chronic disease or motor sequelae before cancer; undergoing physical therapy treatment at the time of evaluation; women who had difficulty understanding the questions, applied questionnaires, or proposed activities.

The study included 10 women diagnosed with breast cancer, post-surgical treatment, and who had already completed chemotherapy and radiotherapy. The selection was through the dissemination of the study via social networks (Instagram and WhatsApp®), including its main objectives,

so that the participants voluntarily applied for the research, carried out at no cost to them.

Participants were randomly allocated to one of the groups: Group 1: Synchronous Telemonitoring (STM), carried out through videoconference with a physical therapist, who applied the exercise program named Breast Cancer Telemonitoring Applied Program (BCTAP), consisting of active stretching, active mobilization, scapular stabilization, and active shoulder exercises, with a gradual range of motion according to the weeks. This program lasted six weeks and was carried out for forty minutes, three times a week. Group 2: Asynchronous telemonitoring (ATM), in which the physical therapist monitored the participants through text messages via WhatsApp® in which, every two weeks, she sent material with the same exercises performed by the STM to be practiced on the days and times they deemed most appropriate. However, they were instructed to perform the proposed exercises at least three times a week.

For the collection of sociodemographic and clinical data, the authors developed and applied an evaluation form, covering aspects such as age, marital status, education, surgical technique (conservative surgery or mastectomy), axillary surgery, if there was breast reconstruction and if chemotherapy, radiotherapy and/or hormone therapy were performed.

Adherence to telemonitoring was quantitatively evaluated by the frequency in which the participants performed the proposed exercises. They were controlled weekly using a spreadsheet in the Microsoft Excel program. To this end, a rate of at least 75% adherence was considered a success[18].

Satisfaction with telemonitoring was quantitatively assessed through two questions, "From zero to ten, how satisfied were you with this intervention?" and "From zero to ten, how much would you recommend this treatment modality?", Zero was the worst evaluation and ten was the best possible evaluation. To this end, the classification of the assigned value was based on a previous study, considering a high degree of satisfaction, values equal to or greater than 8.4[16].

The experience with telemonitoring was qualitatively evaluated, following models described in previous studies[17,19], through two open questions: "How was your experience in this treatment modality?" and "Would you like to suggest changes for improvements? If so, which ones?", in which the participants were free to report their perspectives about the study.

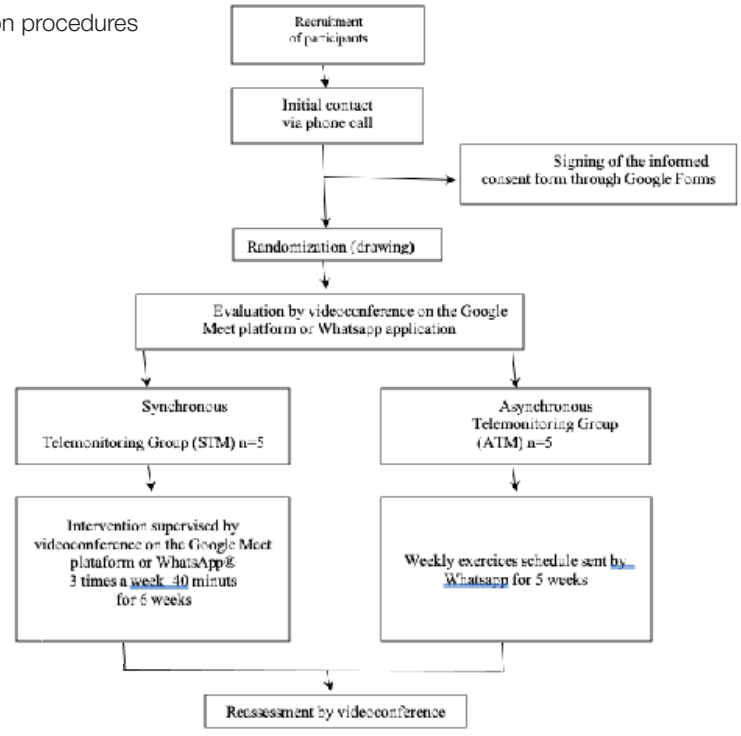
The initial contact with the participants was made via a telephone call. In this communication, aspects such as current health conditions and availability to participate in the research were questioned. In the second moment, a free and informed consent form was sent via the Google Forms® form and, after completion, the evaluation was scheduled, which was later carried out via videoconference through the Google Meet platform or WhatsApp® application, according to the participant's facilities.

Randomization was performed in blocks with an allocation rate of 1:1, so the sample was divided into group 1 (STM) and group 2 (ATM), both containing 5 participants. The same evaluator did all the assessments and reassessments who was a member of the team and received previous training. The collections were carried out in April and June of 2021.

During the six weeks of implementation of the BCTAP, the STM contacted the physical therapist three times a week, via videoconference. Adherence control was performed through the presence or absence of synchronous sessions, similar to a previous study[14]. The STM was monitored once a week, via text messages with WhatsApp® application, for the delivery of exercise material and/or for questions such as difficulties in execution and frequency of compliance. Adherence control was performed through these weekly reports. For both groups, a total of 18 BCTAP sessions was expected.

In the reassessment, questions regarding satisfaction and experience with the telemonitoring service were applied. The experience reports were recorded using the Recorder application on the smartphone when the reassessment was performed via the Google Meet platform or by the Voice Recorder application on the notebook when performed via the WhatsApp® application. Figure 1 shows the collection procedure.

Figure 1: Outline of collection procedures



The data were organized in the Microsoft Excel program (version 2010) and then analyzed in the SPSS software (version 20.0). For descriptive statistics, we used mean and standard deviation measures. For categorical variables, we used measures of the absolute and relative frequency of data.

The interpretation of qualitative data referring to the experience followed the methods of thematic analysis described by Braun and Clarke[20]: (I) familiarization with the data; (II) generation of initial codes; (III) topic research; (IV) review of themes; (V) definition and nomenclature of themes; (VI) production of the report. To preserve confidentiality, the participants were referenced by the letter I (interviewee), followed by an ordinal number (1–10) and the acronym (STM or ATM), referring to the telemonitoring group that participated.

Results

Table 1 shows the aspects that characterize the sample and the clinical factors. The mean age of the women in the STM was 50.8 years old ± 6.7, while the mean age of the women in the ATM was 56 years old ± 11.6. In both groups, most women were married and had more than 8 years of education.

Regarding breast cancer, most women in the STM underwent conservative surgery, radiotherapy, and hormone therapy. In the ATM, most women underwent mastectomy and chemotherapy.

Table 1: Sociodemographic and clinical characteristics of women in a telemonitoring program after breast cancer

Variable	STM	ATM
	n (%)	n (%)
Marital status		
Married	4 (80%)	4 (80%)
Single	1 (20%)	1 (20%)
Education		
< 8 years	1 (20%)	
> 8 years	4 (80%)	5 (100%)
Breast surgery		
Total mastectomy	1 (20%)	3 (60%)
Conservative	4 (80%)	2 (40%)
Axillary surgery		
AD	1 (20%)	3 (60%)
SLB	2 (40%)	1 (20%)
No	2 (40%)	1 (20%)
Radiotherapy		
Yes	4 (80%)	4 (80%)
No	1 (20%)	1 (20%)
Chemotherapy		
Yes	2 (40%)	5 (100%)
No	3 (60%)	0 (0%)
Hormone therapy		
Yes	4 (80%)	3 (60%)
No	1 (20%)	2 (40%)

STM = synchronous telemonitoring group; ATM = asynchronous telemonitoring group; n = absolute frequency; % = relative frequency; AD = axillary dissection; SLB = sentinel lymph node biopsy

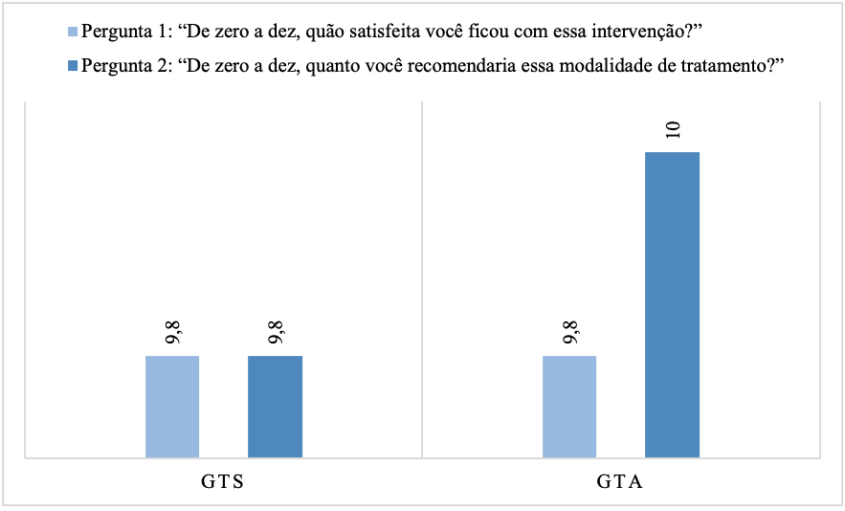
The data in Figure 2 correspond to the adherence of the STM and ATM, with the TAMCP. The frequency of adherence to the STM was 95.5%, representing an average of 17.2 ± 0.837 sessions. In the ATM sample, the frequency of adherence was 93.3%, representing an average of 16.8 ± 1,304 sessions at the end of the six weeks.

Regarding the STM, three participants were absent at some point in the study, and their absences were justified due to vaccination reactions against the SARS-CoV-2 virus. As for the ATM, three participants did not comply with the guidelines to perform the exercises at least three times a week, reporting a lower frequency during the last two weeks of the study. However, one of them performed it four times during week 2, exceeding the guidelines.

Figure 2: Adherence of study participants, demonstrated by the frequency of exercise sessions performed, of the Breast Cancer Telemonitoring Applied Program.

Figure 3: shows the data of the satisfaction of the STM and ATM, with the BCTAP. The STM presented an average of 9.8 ± 0.447 in the evaluation for both questions. The ATM, on the other hand, presented an average of 9.8 ± 0.447 for question 1 and an average of 10 in the evaluation for question 2, resulting in an overall average of 9.9.

Figure 3: Satisfaction of the participants of the Breast Cancer Telemonitoring Applied Program



*Question 1: "From zero to ten, what was your degree of satisfaction with this intervention?"
*Question 2: "From zero to ten, how much would you recommend that treatment modality?"

Table 2 shows the transcripts of the reports of experiences and suggestions for changes for improvements in the BCTAP, by the women of both groups. From the transcripts of the experience reports, we observed perspectives to physical-emotional benefits, benefits in the context of the Covid-19 pandemic, synchronous telemonitoring facilities, comparison between online and face-to-face monitoring, therapist-patient relationship, and cost-benefit.

Only three participants, one from the STM and two from the ATM, suggested any changes for improvements. The STM participant suggested creating an online space where women who have already participated in the BCTAP could write a testimonial about their experiences to motivate more women to participate. The ATM participants, on the other hand, suggested more intense monitoring over the weeks and the extension of the program.

Table 2: List of questions, identified themes, and citations obtained in the interviews

Questions	Themes	Citations
"How was your experience in this treatment modality?"	Physical-emotional benefits	'... I had a knot, a lump, that to sleep I had to take a hot bath, let the waterfall on top... at the end of the exercise I feel like another person, not that person who drags, who has the difficulty of getting something from the closet, drying the back, it has improved a lot.' (I1STM)
		'...I could raise my arm, but I didn't raise it as I do now, I can take a good shower, I can eat, I can do my things... lifting my arm, picking up an object, as I had fear, today I don't have it anymore, today I'm calm, today I'm aware of what I can do and it won't harm me, I pick up an outfit, spread out an outfit, fold a duvet, put a quilt, something I didn't do'. (I7ATM)
		'...when I did the exercises, in addition to helping me in the physical, it also helped me in the psychological, because I was able to concentrate on the exercise and forget about other things... for me, it was fantastic on both sides, both physically and psychologically.' (I10ATM)
	Benefits in the context of the Covid-19 Pandemic	'I found it interesting because, at that moment, if it were face-to-face, I wouldn't do it, you know? Because of the pandemic. (I2STM)
		'I found it very interesting because with the difficulty of going out sometimes, of going to places because of this thing [referring to SARS-CoV-2]... it was very good.' (I8ATM)
		'...I thought the modality was excellent, especially for people who are not able to leave the house like me, who was not there because they had not taken the vaccines, it's great, it's great.' (I9ATM)
		'...this model is very cool, even because of a pandemic and how it can reach people from other cities... it was very, very cool.' (I10ATM)
	Features of synchronous telemonitoring	'...because we have scheduled times, so force us to do it and don't let it go...' (I3STM)
		'... having this commitment, we force ourselves to do the exercise and we pay more attention, right... having a person accompanying the exercise I think it's fundamental, because movement, sometimes, is the little detail, but it's the little detail that you see... unlike someone saying "look, the exercise is like this", then the person will do it thinking it's right and it's not, so this follow-up is important.' (I5STM)
How was your experience in this treatment modality?"	Comparison between online and face-to-face monitoring	'... it's as if it were in person, I didn't feel any difference, with all the same guidelines and care...'. (I3STM)
		'...I know it's different from being in person, but there are a lot of things that you can detect and correct quickly, right...'. (I5STM)
		'... for me, online, the value is the same, in person or online, it's the student who does it, I'm being a student, so if I want the best for myself, it's up to me. I want to improve my quality of life, so, for me, online was better than face-to-face, I believe'. (I7ATM)
		'...I thought it was a very good thing because I did it before [referring to physiotherapy], but then I had to move and it was very wrong, I ended up wasting a lot of time, you know, and then it became much easier because then I do the exercises at home and I don't have to go to the service'. (I8ATM)

Table 2 (continue)

Questions	Themes	Citations
	Relationship therapist-patient	'It was cool, I liked it a lot, we had a lot of fun too'. (I3STM)
		'In addition to the relationship we had, which I think is also important...' (I5STM)
		'...she [referring to the physical therapist] was always very worried, if it worked, if I had any questions, to call her... then it was very quiet...'. (I10ATM)
	Cost-benefit	'...if the person can, they go after it and pay, right? But when the person cannot, it is a great help that you give us...'. (I6ATM)
		'...I have to take advantage of what they're giving me, I'll say the word to you, for free, because not even a private person would do what you guys are doing.' (I7ATM)
"Would you like to suggest changes for improvements? If so, which ones?"		'...I have to take advantage of what they're giving me, I'll say the word to you, for free, because not even a private person would do what you guys are doing.' (I7ATM)
		'Having a place for people to give their statements, something like that to strengthen this, having a space for people who participated to be able to put something there to help multiply it'. (I5STM)
		'...having more contact with the person so that they don't get discouraged. He goes through the exercises, solves the doubts that the person has and then there in the middle of the week, before changing, he gives some contact'. (E9GTA)
		'Long time [laughs], I was used to it…' (I10ATM)

Discussion

This study, which aimed to verify and compare the adherence, satisfaction, and experience of women after breast cancer in a synchronous and asynchronous telemonitoring program, showed that in both methods there was a high rate of adherence, a high degree of satisfaction, and reports of positive experiences.

The high rate of adherence found in this study corroborates the findings of previous studies carried out in other populations. A study that applied an online exercise program to 22 patients with chronic obstructive pulmonary disease (COPD) concluded, after a frequency of 61%, that adherence was similar to exercise interventions in a hospital environment[16]. However, a systematic review of remote exercise interventions in sedentary people with cancer stated a success rate of at least 75% adherence to compliance with the guidelines[18].

The high degree of satisfaction observed in this study is similar to findings in previous studies, which addressed satisfaction in online exercise programs in individuals with COPD and post-stroke, demonstrating an average of 8.4 in the satisfaction index[16] and 95% in the recommendation of such modality[16,21]. A systematic review that addressed telehealth and satisfaction observed positive results, preference in the modality, ease of use, low cost or cost savings, and enhanced communication as the main contributing factors for a high degree of satisfaction. This study verified synchronous and asynchronous methods, including videoconferencing, text messages, phone calls, among others[15].

Regarding the reports of experiences, the topic of physical-emotional benefits addressed by the participants included information that the exercises, in addition to having helped in the physical state, also contributed to the improvement of the psychological state, corroborating a previous study that demonstrated that telehealth is favorable for improving the psychological state of patients with breast cancer[22]. Another study highlighted the benefits of remote rehabilitation for the functionality of the arm in post-breast cancer women[23], confirming the narratives that, after the exercises, they obtained improvements in daily activities such as reaching for objects from the closet, drying the back, extending clothes on the clothesline and make the bed.

Another topic that emerged was the benefits of telemonitoring in the current context of the Covid-19 pandemic. The reports encompassed perspectives that face-to-face monitoring would not be an alternative at the moment, due to the risks of exposure to the virus. A descriptive cross-sectional study addressing teleoncology during the Covid-19 pandemic, containing 421 patients, 64.1% of whom were breast cancer patients, concluded, after meeting the demands of 92.8% of patients, that teleoncology can be a good alternative in this context[7].

The participants of the synchronous telemonitoring group emphasized the advantages of the method through videoconferencing. In the narratives, they pointed out the advantages of the times scheduled with the physical therapist and how this commitment encouraged the practice of exercises. Also, they reported that synchronous monitoring is important, as the physical therapist can correct the exercises at the same time, unlike the asynchronous method. A randomized study containing a synchronous telerehabilitation group for patients with chronic heart failure reinforced that this method allowed the physical therapist to observe the participants performing the exercises and provide feedback and modification in real time[24], confirming such perspectives.

The theme of comparison between online and face-to-face monitoring addressed in the experience reports of this study included some points of view such as there is no difference between the modalities and the remote format is even better. A systematic review argues that telerehabilitation can lead to similar clinical outcomes compared to traditional programs[25], confirming these narratives.

The good relationship between therapist and patient, also mentioned in the reports, corroborates the results of a study carried out with individuals with Achilles tendinopathy, which showed that such an alliance facilitates adherence to telehealth[26].

Through the reports, the participants also mentioned that a positive point of this study was the free access to the BCTAP. Although not exclusively the modality is offered free of charge to patients, the literature shows that telehealth has benefits in the cost-benefit. A randomized clinical trial, which evaluated the effect of a virtual physical therapy program on total costs in the three months after total knee arthroplasty, concluded that participants had significantly lower health costs compared to usual care[27].

As a suggestion for improving the program, one of the ATM participants thought it important to have more intense monitoring, so that women do not get discouraged. This report is similar to a previous study carried out in the population with COPD, which showed that treatment adherence was reduced when there was no physical therapy follow-up, reinforcing the benefits of text messages in motivating the practice of exercises[25]. Another study, developed a bank of text messages based on scientific evidence to support the mental and physical health of women after breast cancer treatment, covering several topics, to be forwarded to patients four weekly times[28].

The justifications for absences of the ATM participants included aspects such as the priority to spend more time with the family and the lack of time due to the work trip, corroborating with a hybrid intervention study, in which they highlighted the difficulty of women in reconciling the telerehabilitation with other daily activities that arise during the week[29].

Analyzing the reports of experiences with the BCTAP, we observed that the participants who, for some reason, missed the synchronous sessions or did not comply with the weekly frequency of exercises proposed in the asynchronous monitoring, or who did not give the maximum score to the questions related to satisfaction, continued with positive experiences in the telemonitoring method performed.

This preliminary study is one of the first to verify the concomitant adherence to satisfaction of post-breast cancer women in an online exercise program, and the first, to the best of our knowledge, to analyze the experience qualitatively. The outcomes of this study can help clinicians and researchers to adjust their exercise prescriptions, to obtain better adherence and satisfaction of this population in online service modalities. The limitations of the study include the absence of an effective instrument to verify the adherence of ATM participants and the lack of follow-up of women in both groups after six weeks, hindering to conclude on the effectiveness of the program in motivating them in the long term.

Conclusions

According to this pilot study, post-breast cancer women demonstrated a high rate of adherence, a high degree of satisfaction, and reports of positive experiences in a telemonitoring program, synchronous and asynchronous. However, we observed that the synchronous group adhered better to the program, while the average of satisfaction was higher in the asynchronous group. Telemonitoring is a well-accepted modality among post-treatment breast cancer patients and can be performed not only during the Covid-19 pandemic but as a viable alternative for rehabilitation.

References

1. Ferlay J, Colombet M, Soerjomataram I, Parkin DM, Piñeros M, Znaor A, et al. Cancer statistics for the year 2020: an overview. Int J Cancer. 2021;(February):1–12. doi:10.1002/ijc.33588

2. Bruce J, Williamson E, Lait C, Richmond H, Betteley L, Lall R, et al. Randomised controlled trial of exercise to prevent shoulder problems in women undergoing breast cancer treatment: Study protocol for the prevention of shoulder problems trial (UK PROSPER). BMJ Open. 2018;8(3). doi:10.1136/bmjopen-2017-019078

3. Pillai US, Kayal S, Cyriac S, Nisha Y, Dharanipragada K, Kamalanathan SK, et al. Late effects of breast cancer treatment and outcome after corrective interventions. Asian Pacific J Cancer Prev. 2019;20(9):2673–9. doi:10.31557/APJCP.2019.20.9.2673

4. Konieczny M, Cipora E, Sygit K, Fal A. Quality of life of women with breast cancer and socio-demographic factors. Asian Pacific J Cancer Prev. 2020;21(1):185–93. doi:10.31557/APJCP.2020.21.1.185

5. Serra-Añó P, Inglés M, Bou-Catalá C, Iraola-Lliso A, Espí-López GV. Effectiveness of myofascial release after breast cancer surgery in women undergoing conservative surgery and radiotherapy: a randomized controlled trial. Support Care Cancer. 2019;27(7):2633–41. doi:10.1007/s00520-018-4544-z

6. Dietz JR, Moran MS, Isakoff SJ, Kurtzman SH, Willey SC, Burstein HJ, et al. Recommendations for prioritization, treatment, and triage of breast cancer patients during the COVID-19 pandemic. the COVID-19 pandemic breast cancer consortium. Breast Cancer Res Treat. 2020;181(3):487–97. doi:10.1007/s10549-020-05644-z

7. Yildiz F, Oksuzoglu B. Teleoncology or telemedicine for oncology patients during the COVID-19 pandemic: The new normal for breast cancer survivors? Futur Oncol. 2020;16(28):2191–5. doi:10.2217/fon-2020-0714

8. Gosain R, Abdou Y, Singh A, Rana N, Puzanov I, Ernstoff MS. COVID-19 and Cancer: a Comprehensive Review. Curr Oncol Rep. 2020;22(5). doi:10.1007/s11912-020-00934-7

9. CEPEDA RM. Entidades de Fiscalização do Exercício das Profissões Liberais. DIÁRIO OF DA UNIÃO. 2020;184.

10. Mella-Abarca W, Barraza-Sánchez V, Ramírez-Parada K. Telerehabilitation for people with breast cancer through the COVID-19 pandemic in Chile. Ecancermedicalscience. 2020;14:1–8. doi:10.3332/ECANCER.2020.1085

11. Ferreira CHJ, Mascarenhas LR. RECOMENDAÇÃO GERAL ABRAFISM FISIOTERAPIA POR MEIO DIGITAL/TELECONSULTA E TELEMONITORAMENTO NA FISIOTERAPIA EM SAÚDE DA MULHER E URO-PROCTOLOGIA. 2020. 32 p.

12. Hoaas H, Andreassen HK, Lien LA, Hjalmarsen A, Zanaboni P. Adherence and factors affecting satisfaction in long-term telerehabilitation for patients with chronic obstructive pulmonary disease: A mixed methods study eHealth/ telehealth/ mobile health systems. BMC Med Inform Decis Mak. 2016;16(1):1–14. doi:10.1186/s12911-016-0264-9

13. Sacomori C, Zomkowski K, dos Passos Porto I, Cardoso FL, Sperandio FF. Adherence and effectiveness of a single instruction of pelvic floor exercises: a randomized clinical trial. Int Urogynecol J. 2020;31(5):951–9. doi:10.1007/s00192-019-04032-6

14. Lai B, Bond K, Kim Y, Barstow B, Jovanov E, Bickel CS. Exploring the uptake and implementation of tele-monitored home-exercise programmes in adults with Parkinson's disease: A mixed-methods pilot study. J Telemed Telecare. 2020;26(1–2):53–63. doi:10.1177/1357633X18794315

15. Kruse CS, Krowski N, Rodriguez B, Tran L, Vela J, Brooks M. Telehealth and patient satisfaction: A systematic review and narrative analysis. BMJ Open. 2017;7(8):1–12. doi:10.1136/bmjopen-2017-016242

16. Dekker-van Weering MGH, Vollenbroek-Hutten MMR, Hermens HJ. Adherence to an online exercise program for COPD patients in the home environment- a pilot study. Health Technol (Berl). 2016;6(4):259–68. doi:10.1007/s12553-016-0137-3

17. Hwang R, Mandrusiak A, Morris NR, Peters R, Korczyk D, Bruning J, et al. Exploring patient experiences and perspectives of a heart failure telerehabilitation program: A mixed methods approach. Hear Lung J Acute Crit Care. 2017;46(4):320–7. doi:10.1016/j.hrtlng.2017.03.004

18. Ibeggazene S, Turner R, Rosario D, Bourke L. Remote interventions to improve exercise behaviour in sedentary people living with and beyond cancer: a systematic review and meta-analysis. BMC Cancer. 2021;21(1):1–10. doi:10.1186/s12885-021-07989-0

19. Tsai LLY, McNamara RJ, Dennis SM, Moddel C, Alison JA, McKenzie DK, et al. Satisfaction and Experience with a Supervised Home-Based Real-Time Videoconferencing Telerehabilitation Exercise Program in People with Chronic Obstructive Pulmonary Disease (COPD). Int J Telerehabilitation. 2016;8(2):27–38. doi:10.5195/ijt.2016.6213

20. Braun V, Clarke V. Using thematic analysis in psychology. Qual Res Psychol. 2006;3(2):77–101. doi:10.1191/1478088706qp063oa

21. Gallowayphd M, Marsden DL, Callister R, Nilsson M, Erickson KI, English C. The feasibility of a telehealth exercise program aimed at increasing cardiorespiratory fitness for people after stroke. Int J Telerehabilitation. 2019;11(2):9–28. doi:10.5195/ijt.2019.6290

22. Chen YY, Guan BS, Li ZK, Li XY. Effect of telehealth intervention on breast cancer patients' quality of life and psychological outcomes: A meta-analysis. J Telemed Telecare. 2018;24(3):157–67. doi:10.1177/1357633X16686777

23. Galiano-Castillo N. Telehealth System: a Randomized Controlled Trial Evaluating the Impact of an Internet-Based Exercise Intervention on Quality of Life, Pain, Muscle Strength and Fatigue in Breast Cancer Survivors. Cancer. 2016;122:3166–74. doi:10.1002/cncr.30172

24. Hwang R, Bruning J, Morris NR, Mandrusiak A, Russell T. Home-based telerehabilitation is not inferior to a centre-based program in patients with chronic heart failure: a randomised trial. J Physiother. 2017;63(2):101–7. doi:10.1016/j.jphys.2017.02.017

25. Kairy D, Lehoux P, Vincent C, Visintin M. A systematic review of clinical outcomes, clinical process, healthcare utilization and costs associated with telerehabilitation. Disabil Rehabil. 2009;31(6):427–47. doi:10.1080/09638280802062553

26. Hasani F, Malliaras P, Haines T, Munteanu SE, White J, Ridgway J, et al. Telehealth sounds a bit challenging, but it has potential: participant and physiotherapist experiences of gym-based exercise intervention for Achilles tendinopathy monitored via telehealth. BMC Musculoskelet Disord. 2021;22(1):1–12. doi:10.1186/s12891-020-03907-w

27. Bettger JP, Green CL, Holmes DN, Chokshi A, Richard C. Mather III. Effects of Virtual Exercise Rehabilitation In-Home Therapy Compared with Traditional Care After Total Knee Arthroplasty. J Bone Jt Surg. 2019;1–9. doi: 10.2106/JBJS.19.00695

28. Singleton A, Raeside R, Partridge SR, Hayes M, Maka K, Hyun KK, et al. Co-designing a lifestyle-focused text message intervention for women after breast cancer treatment: Mixed methods study. J Med Internet Res. 2021;23(6):1–13. doi:10.2196/27076

29. Loubani K, Kizony R, Milman U, Schreuer N. Hybrid tele and in-clinic occupation based intervention to improve women's daily participation after breast cancer: A pilot randomized controlled trial. Int J Environ Res Public Health. 2021;18(11). doi:10.3390/ijerph18115966

Declaration of Conflicting Interests: Nothing to declare.

Financing source:
None.