Use of telehealth among cancer survivors: A scoping review

Abstract

Background: Long-term cancer survivors have specific needs that are frequently neglected.

Telehealth, as a new form of health care, can benefit this growing population. **Objective**: To

identify, analyze and synthesize the existing evidence on the use of telehealth in the care of cancer

survivors after the end of treatment. **Methods**: A scoping review was conducted in the databases

PubMed, CINAHL, COCHRANE, SCIELO, DIALNET and LILACS and reference institutions in

cancer. **Results**: The initial search yielded 406 publications with 59 articles meeting the eligibility

criteria. There are different types of telehealth (video calls, phone calls, websites, mobile

applications, and short message services) used for the care of cancer survivors. Most telehealth

interventions focus on improving the physical and mental spheres of quality of life in the extended

survival phase (from 1 to 3 years postdiagnosis), with only 2 articles (3%) on long-term cancer

survivors (more than 5 years postdiagnosis). Survivors are satisfied with telehealth interventions,

noting the importance of improving comprehensibility, personalization of the platforms, and the

lack of excessive information included. **Conclusions**: Telehealth is a feasible modality for cancer

survival care. The scarcity of interventions aimed at long-term survivors stands out, as does the

general neglect of the social and spiritual spheres of quality of life. **Implications for practice:**

Telehealth platforms must adapt their content, format and items to the preferences reported by the

survivors.

INTRODUCTION

Cancer is one of the main causes of morbidity and mortality in the world and its incidence is increasing. In 2020, 19.3 million new cases were reported worldwide and population estimates indicate that the number of new cases will increase in the coming decades, reaching 30.2 million in 2040¹. However, cancer mortality has decreased significantly in recent decades¹. This is due not only to primary and secondary prevention through awareness campaigns, adoption of healthy lifestyles and early diagnosis through population screening but also great advances in different therapies, as well as the decrease in certain risk behaviors. As a consequence, the survival rate has increased significantly, doubling in the past 40 years¹.

The growing population of cancer survivors present physical, psychosocial and information needs that are frequently neglected by the health system². Hence, it is important to provide care that meets the specific needs of these people. Although the definition of "cancer survivor" varies among countries and contexts, many authors referred to cancer survivor as a person who has suffered from cancer, has completed treatment and is now free of disease but often experiences late sequelae derived from cancer and treatments³. The experience of living with and beyond cancer has been divided into three stages: (1) acute survival (living with cancer: being diagnosed with cancer and ongoing treatment), (2) extended survival (1 to 3 years postdiagnosis) and (3) permanent survival or long-term survival (living more than 5 years postdiagnosis)². Therefore, it is a transition period in which the monitoring and management of late effects (fear of recurrence, chronic pain, fatigue, etc.) are necessary, and the focus of attention should be the improvement of the quality of life of the survivor⁴.

Telehealth, as a new form of health care, can be an answer to this. It consists of the use of communication technologies to provide remote medical care using computers, cameras, videoconferencing, the internet and satellite and wireless communications⁵. This new way of providing health care is used mainly for consultations, questions or doubts, acquisition of healthy behaviors, supervision and educational purposes⁵. It has been shown to have an impact on quality of life compared to usual care⁶. Hence, telehealth is suitable for use with cancer survivors since it has the ability to bring health services to the patients in their homes and reinforce the management of symptoms without the need for direct physical contact with hospital or clinical services, which increases access to treatments in case of difficulty in displacement⁶. In addition, telehealth facilitates the transition of care from the hospital to the home and community once treatments are completed, which gives survivors and their families or caregivers greater responsibility with respect to the management of their health, also known as self-management of health⁶.

Despite the increasing use of telehealth in cancer, especially during the COVID-19 pandemic⁷, no reviews were found in the literature on the use of different types of telehealth in the care of cancer survivors once treatment is completed. Having a synthesis of the literature on this topic would help clarify the characteristics of telehealth interventions that improve the quality of life of cancer survivors and identify survivors' preferences and their degree of satisfaction with this new model of care. The present study was conducted to fill in these gaps in the literature.

OBJECTIVE

The objective of this study was to describe, analyze and synthesize the published literature on the use of telehealth in the care of cancer survivors after treatment was completed.

METHODS

A scoping review, which was considered the most appropriate methodology to meet the objectives of this study, was conducted. Evidence on the topic is incipient; therefore, there were no specific questions to be answered. Consequently, it is an ideal format to determine the gaps in the literature on telehealth in cancer survivors⁸.

Based on Arksey and O'Malley's⁹ methodological framework for scoping reviews, the scoping review was established according to the Joanna Briggs Institute Guidelines¹⁰. The results are presented according to the PRISMA statement for scoping reviews (Preferred Reporting Items for Systematic reviews and Meta-Analyzes extension for Scoping Reviews PRISMA-ScR)¹¹.

Research question

The following research question was considered: How can telehealth be used in the care of cancer survivors after treatment is completed?

Search strategy

The search strategy was structured in two phases. In the first, a review of the databases was carried out, and in the second, catalogues from relevant institutions were searched.

Phase 1: Databases

Bibliographic searches were performed in the databases PubMed, CINAHL, COCHRANE, SCIELO, DIALNET and LILACS for the following keywords in English or Spanish (depending on the database): Cancer survivor, cancer survival, long-term cancer survivor, long-term cancer survival, post-treatment cancer, Tele-nursing, Teleoncology, Telemedicine, Telehealth,

Videoconference, web-based, Email and Telephone. The search was limited to those articles that had the aforementioned terms in their titles, with the exception of CINAHL, in which the terms were not restricted to a specific field, and «COCHRANE, in which the population and the intervention were restricted to the titles of the articles and the results the titles, abstracts and keywords. The terms were combined using the Boolean operators AND / OR. The search strategy in PubMed is illustrated in Figure 1.

((Cancer survivor [MeSH Terms] OR Long- term cancer survivor* OR Permanent cancer survivor* OR Cancer post-treatment) AND (Telenursing[Title] OR Teleoncology[Title] OR Telemedicine[Title] OR E-health[Title] OR Telehealth[Title] OR Videoconferenc*[Title] OR Web based[Title] OR Email[Title] OR Telephone[Title])) AND (Use OR Benefits OR Advantages OR Disadvantages OR Patient satisfaction OR Quality of life))

Filters: English-Spanish, from 2011 – 2021

Figure 1. Search strategy in PubMed

Phase 2: Institutions of interest in cancer survival care

A literature search was conducted in reference institutions on the subject, including the National Cancer Institute (NCI), the Spanish Society of Oncology Nursing (SEEO), the Spanish Society of Medical Oncology (SEOM) and the American Society of Clinical Oncology (ASCO). The terms "cancer survival and telehealth", "cancer survivor" and "long cancer survival" were combined. From this search, 20 results were obtained, and finally, 2 were selected considering the inclusion criteria.

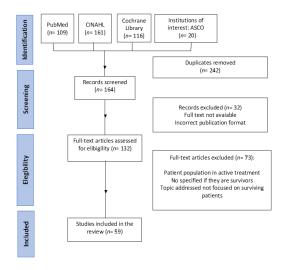
Selection criteria

The inclusion criteria were primary articles, bibliographic reviews and reports published by official organizations from 2011 to 2021, which addressed the use of telehealth in the care of cancer survivors after active treatment was completed and aimed at adults.

Blogs, brochures, or discussion articles were excluded. Likewise, those interventions that included patients in treatment, in the palliative phase or were exclusively face-to-face were eliminated.

Studies selection

Two reviewers participated in the entire study selection process. Discrepancies were resolved by consensus or with the intervention of a third reviewer. Initially, a screening of duplicate studies was performed. The reading of the title and abstract, considering the inclusion criteria, allowed a second round of eliminations. Finally, the full texts of the studies were retrieved, and a new selection was made applying the aforementioned criteria (Figure 2).



Irurita-Morales, P., Soto-Ruiz, N., Martín-Rodríguez, L. S., Escalada-Hernández, P., & García-Vivar, C. (2023). Use of Telehealth Among Cancer Survivors: A Scoping Review. *Telemedicine and E-Health*, 29(7), 956–985. https://doi.org/10.1089/tmj.2022.0351

Figure 2. Flowchart of the Study Search and Selection Process

Considering that this is a scoping review with the objective of providing a general description of the topic and not answering a clinical question, the evaluation of the risk of bias is not recommended⁹.

Data extraction

Data extraction from the selected studies was performed by two reviewers, and the following aspects were indicated: author, country, study objective, survival, study design and sample, type of cancer, type of intervention (telehealth) and results.

RESULTS

After the initial search in the different databases and official organizations, 406 studies were found (PubMed n = 109, CINAHL n = 161, COCHRANE = 116, ASCO n = 20), of which 242 were discarded after the detection of duplicates, 32 due to incorrect publication format or lack of access to the full article. Therefore, 132 articles were retrieved for screening and evaluation of eligibility. After a complete reading of the articles, 73 were excluded because they did not meet the inclusion criteria, and 59 articles were finally included (Figure 1).

Next, the general characteristics of the selected articles are presented, as well as the results of the analysis of the studies, structured into the following five sections: (1) characteristics of the selected articles; (2) use of telehealth in the different stages of survival; (3) telehealth models used in cancer survival care; (4) quality of life of survivors and telehealth; and (5) satisfaction

and use preferences of cancer survivors with respect to telehealth-mediated care. Table 1 provides a summary of the main characteristics of the studies.

[Table 1. Main characteristics of the studies]

1. Characteristics of the selected articles

Regarding the origin of the studies, 43% (n = 26) of the publications were from the United States, 22% came from the Netherlands (n = 12) and 8% (n = 5) came from the United Kingdom. Studies from Spain and Australia accounted for 7% (n = 4) in each country, 5% (n = 3) were from South Korea, 3% (n = 2) were from Canada, and 1.66% (n = 1) were from Norway, Switzerland and Mexico.

Of the selected articles, 59% included survivors of a specific type of cancer, while 34% included participants with multiple types of cancer. In addition, 7% (n = 4) of the articles did not specify the type of cancer that their participants had (Table 2).

[Table 2: Types of cancer included in the different articles]

2. Use of telehealth in the different stages of survival

With respect to the different stages of survival, it was observed that most of the articles included participants who were in the extended survival phase (47% of the studies, n = 27), that is, from 1 to 3 years postdiagnosis. In contrast, 3% (n = 2) of articles extended their interventions to the long survival stage (more than 5 years postdiagnosis)^{12,13}. A total of 10% of the studies, despite establishing a specific limit of minimum months/years that must have elapsed since the end of treatment, did not specify if some of their participants were in the permanent or long survival

9

phase^{14–19}. Further, 40% of the studies mentioned that their participants had completed treatment

but did not detail in what phase of survival they were^{5,6,20–40}

Analyzing specifically the interventions aimed at long-term survivors, only the studies by

Syrjala et al.¹² and Wagner et al.¹³ included this type of population. Specifically, the participants

in these studies included a sample of survivors from 3 to 18 years posttreatment 12 and from 1 to 10

years posttreatment¹³, respectively. In both studies, cognitive-behavioral therapy was used,

among others, to work on aspects of the mental sphere of survivors, such as anxiety, depression

or fear of recurrence. To do this, they developed a website that had didactic content, interactive

tools, messaging, or forums and was completed with phone calls. It should be noted that both

studies showed the efficacy of their interventions in the improvement of mental health aspects of

survivors.

3. Telehealth models used in cancer survival care

As mentioned above, telehealth can be mediated by different models and types of technologies.

Of the articles included in this review, 34% based their interventions on a website, 26% used

phone calls, 21% used mHealth, specifically a mobile phone application, 9% used video calls,

5% used email or electronic mail and 4% included activity wristbands. Only 1% used Short

Message Service (SMS) (Table 3).

[Table 3: Type of telehealth used in the studies]

Likewise, in line with the use of technologies in the care of survivors, the inclusion of artificial intelligence (AI) through software that personalizes and individualizes its interventions to the situation and needs of the users was included in five studies^{26, 29, 31,32,41}.

Finally, it should be noted that a pattern has not been observed that determines or reflects the type of telehealth to be used as a function of the survival phase in which the participants are found or the type of cancer they suffer. That is, regardless of these factors, the interventions included in this review have used different types of telehealth interchangeably, obtaining in most cases notable benefits for their participants.

4. Quality of life of survivors and telehealth

Quality of life is composed of different spheres: physical, mental, spiritual and social⁴². From a holistic perspective and considering the human being as a bio-psycho-social being, cancer affects all spheres inherent to the human being. However, in the literature included in this review, the main areas addressed in the stage of cancer survival were physical in 36% of the studies, mental in 39%, and physical and mental in 25%.

Of the totality of studies that addressed these spheres (n = 36), 36% correspond to those interventions focused exclusively on the physical area $^{15, 17, 23, 24, 29, 34, 43-49}$, trying to improve the health of the survivors mainly through physical activity programs, dietary habits, and symptom management.

In parallel, 39% of the studies focused on the mental sphere. To do this, they either performed a purely theoretical approach through CBT^{12–14, 18, 36,50} and/or cognitive restructuring^{51,52} with

texts, videos and audios available on a website or opted for a theoretical-practical approach^{16,53,54} through mind-body connection, behavioral activation and problem solving^{55,56}.

Finally, 25% of the publications addressed both spheres (physical and mental) together, mainly with a purely theoretical approach through educational and support sessions^{31,57–61} and in some cases, with a theoretical-practical approach^{37,39,40} that combined education with physical, cognitive and emotional training. No study was found that addressed the other two spheres of quality of life: social and spiritual.

The main interventions in the physical and emotional sphere focus on addressing problems such as pain, fatigue, anxiety and depression, fear of recurrence, sleep problems, and concentration problems, among others^{59,62}.

5. Satisfaction and preferences of cancer survivors with respect to telehealth-mediated care

Satisfaction

Of the selected studies, 11 evaluated the satisfaction of their participants with respect to the intervention 18, 20, 27, 33, 35, 43, 54, 56, 58,63–65. Despite the use of different satisfaction assessment methods, 92% of the publications obtained positive results 18, 20, 27, 33, 35, 43, 54, 56, 58,63–65 and only 8% obtained medium-low satisfaction scores 43.

Format and items

Regarding the preferences of cancer survivors regarding the format and items of telehealth platforms, the studies revealed that survivors appreciated the inclusion of a glossary that explained medical terms⁶⁶ and the opportunity to talk in real time with a professional^{21,66}. In

addition, special importance was given to comprehensibility⁶⁶, customization^{19,29} and succinct information⁶⁵. Survivors also indicated that it could be beneficial to carry out training on the use of the different platforms prior to their use⁶⁶.

As an element common to several studies, the presence of reminders was an item highly valued by survivors^{19, 21,23}. In addition, visual elements were appreciated^{23,26}, showing a preference for the inclusion of demonstrations or explanations in video with audio^{19, 23, 29,59}. Likewise, the importance of these being carried out by a variety of models²³ and/or other survivors⁵⁹ was noted, thus allowing a greater identification of users.

The usefulness of platforms that provided the possibility of organizing and managing health information²⁶ and compiling the information received previously in one place¹⁹ was underscored. In addition, the possibility of recording the sequelae related to the treatment was appreciated^{23,26}. Finally, survivors indicated a need to include a monitoring function that would allow them to see their evolution in a graph (or similar), complemented with a system of rewards²³.

Type of care and telehealth used

To determine the inclination of the survivors for one type or another of telehealth, several authors used different questionnaires. These results reflected that there is a greater preference for in-person follow-up because it is considered more personal, reassuring and accurate. That is, many survivors were concerned about missing the opportunity for a physical examination, something that was considered a fundamental element to identify the recurrence of the disease. That is why many respondents indicated that they would agree with a combination of in-person and internet-based follow-up interactions³⁰.

In addition, it highlights the importance of closeness and personalization of care. The studies revealed that the prior establishment of a good therapeutic relationship with a professional and subsequent intervention translated into better results⁶⁷. In addition, it has been shown that the interventions mainly favored those people with a higher education level, greater health literacy, greater self-control, greater burden of symptoms and lower self-efficacy⁶⁸ and young survivors, since they are usually more accustomed to the use of new information and communication technologies⁶⁹.

It is worth mentioning that breast cancer survivors included in the study by Paxton et al.²⁸ preferred interventions by email (50%), the web (48%) or conventional mail (45%) to group sessions (39%) and telephone contact (10%).

Finally, it has been shown that telehealth interventions are as effective both in terms of utility and costs as the usual care for cancer survivors⁷⁰.

DISCUSSION

The objective of this scoping review was to explore the use of telehealth in the care of cancer survivors after the end of treatment. The results showed that interventions mediated by telehealth in the care of survival have different modalities: mobile application, activity wristband, videoconference, email, phone call, SMS or website. No pattern was found to determine the telehealth model to be used based on the stage of survival or the type of cancer, although greater use of the website was evident. The alternative methodology to telehealth is a conventional survival care plan, that is a detailed document given to a patient after active treatment is completed, that contains a summary of the patient's treatment, along with recommendations for follow-up care ⁷¹. As described by Hill et al⁷², these plans are usually paper based and delivered Irurita-Morales, P., Soto-Ruiz, N., Martín-Rodríguez, L. S., Escalada-Hernández, P., & García-Vivar, C. (2023). Use of Telehealth Among Cancer Survivors: A Scoping Review. *Telemedicine and E-Health*, 29(7), 956–985. https://doi.org/10.1089/tmj.2022.0351

in person, and can be combined with additional resources. As these are provided in the form of a static paper document, their effectiveness depends on the patient verifying, analyzing and interpreting the information proactively²⁶. Therefore, self-directed and self-managed survival care plans by the patient are necessary. On the other hand, this review has shown the scarcity of publications related to the use of telehealth on the care of long-term cancer survivors (permanent stage of survival, starting at 5 years postdiagnosis). However, it should be emphasized that those who are in the stage of long survival or permanent survival have specific needs, greater experience, knowledge of the disease and self-management of it⁶⁵. Consequently, addressing their needs should also be the object of attention and study.

Despite the increasingly frequent use of telehealth, as well as the demonstration of its effectiveness in improving quality of life and symptom management in cancer survivors⁷⁰, there are aspects that must be considered for the success or failure of a digital intervention, such as the periodicity of the intervention, the means of transmission (video call, phone call, website, mobile app or SMS), and the content and its structure²⁴.

Regarding the quality of life and the different spheres that compose it⁴², the telehealth interventions reviewed focused primarily on addressing the physical and/or mental well-being of cancer survivors. Therefore, the rest of the spheres and the problems inherent to them were left unattended. It is important to carry out interventions based on comprehensive care that understands the human being from a bio-psycho-social perspective.

The studies included in this review revealed the satisfaction of survivors with this new modality of care. They highlighted the importance of taking into account the following preferences of cancer survivors regarding the format and items of telehealth platforms: inclusion of a glossary

of medical terms⁶⁶; possibility to converse in real time with a professional^{21,66}, comprehensibility⁶⁶, customization^{19,29} and succinct information included⁶⁵; prior training on the use of the platforms⁶¹; reminders for good symptom management^{19,21,23}, inclusion of visual elements^{23,26} and video explanations with audio^{19,23,29,59}, as well as the incorporation of videos of survivors⁵⁹ for greater user identification. Likewise, survivors considered it important that new technologies cover their specific needs in the long-term survival stage, including fear of recurrence, anxiety, depression, fatigue, pain, concentration problems, sleep problems or difficulties in the social sphere, among others⁵⁹.

Therefore, the cancer survival stage requires comprehensive care that addresses the needs from a holistic perspective that places the individual at the center. Telehealth can respond by being an ideal modality for the resolution of questions and doubts, as well as for the promotion of healthy behaviors, supervision and other educational purposes⁵. In addition, telehealth has proven to be a feasible, effective care model and is well received by survivors^{18, 20, 27, 35, 65,70}. In short, telehealth responds to the needs of survivors, facilitating their transition from the hospital environment to the home and community⁶. That is why its combination with periodic face-to-face health exams (also called combined care) gives rise to ideal care for cancer survivors. Nonetheless, the suitability of telehealth will depend on clinical and practical factors, as well as, on the preferences and willingness of the patients and their families⁷³.

Limitations and strengths of the review

The main limitation found in this review is the lack of consensus regarding the concept of "survivor" and the different stages of survival. It is a term that is sometimes erroneously used in the literature to refer to those patients who have just been diagnosed or are in treatment and

therefore are not free of disease. As a consequence of this discrepancy and lack of unification, it is difficult to discriminate between those articles that only address survivors after treatment is completed. In addition, numerous studies did not mention in what stage of survival their participants were, complicating the screening and the identification of articles to include in the review.

Despite this, the performance of a systematic search in the main databases and reference organizations regarding the subject discussed, as well as a thorough screening of the articles included, allowed us to respond to the objectives of this review. The broad scope of this review (n = 59) offered a comprehensive and detailed view of the use of telehealth in cancer survival. The great predominance of studies on interventions aimed at breast cancer survivors stands out (47%). Consequently, the results and conclusions obtained in these studies cannot always be extrapolated to the other survivors²⁴. Therefore, it is considered essential to study and develop interventions that address other types of cancer.

CONCLUSIONS

After the present review, it is concluded that telehealth is a feasible modality for cancer survival care. The use of telehealth can address the different spheres of quality of life either independently or jointly. However, the neglect of the social and spiritual realm stands out. Therefore, it is worth noting the importance of carrying out interventions based on comprehensive care that considers the individual from a bio-psycho-social perspective. Likewise, the scarcity of evidence regarding the use of telehealth in the care of permanent survival/long survival stands out, a stage characterized by the seniority of the survivors, who have different needs than those who are in another stage.

However, both the temporal distribution of telehealth interventions and health literacy, self-control, self-efficacy, and the age of the survivors predispose the effectiveness of digital interventions. Therefore, these are factors to take into account prior to the development of a telehealth intervention for cancer survival care.

Finally, in line with that reported by cancer survivors in the different interventions, it should be noted that the format and content of telehealth platforms should respond to the needs and preferences referred to by them. In this way, it will be possible to respond to their needs and achieve the objectives of interventions.

AUTHORSHIP CONFIRMATION/CONTRIBUTION STATEMENT

PIM: Conceptualization, Methodology, Investigation, Formal analysis, Writing - Original Draft, Writing - Review & Editing.

NSR: Conceptualization, Methodology, Investigation, Formal analysis, Writing - Original Draft, Writing - Review & Editing.

LSM: Conceptualization, Methodology, Investigation, Formal analysis, Writing - Original Draft, Writing - Review & Editing.

PEH: Conceptualization, Methodology, Investigation, Formal analysis, Writing - Original Draft, Writing - Review & Editing.

CGV: Conceptualization, Methodology, Investigation, Formal analysis, Writing - Original Draft, Writing - Review & Editing.

CONFLICT OF INTEREST

The authors declare no conflict of interest regarding the publication of this paper.

The authors declare that this article has not been published previously, that it is not under consideration for publication elsewhere, that the publication is approved by all authors, and that, if accepted, it will not be published elsewhere in the same form, in English or in any other language.

FUNDING

This review was supported by the National Institute of Health Carlos III (ISCIII), Spain, for the period 2022-2024 (Research projects in health, PI21/00894).

REFERENCES

- Miller KD, Nogueira L, Devasia T, et al. Cancer treatment and survivorship statistics,
 2022. CA Cancer J Clin 2022;72(5):409–436; doi: 10.3322/caac.21731.
- 2. Garcia-Vivar C, Domenech-Climent N, González-Concepción M, et al. La atención y los cuidados a los supervivientes de cáncer en España: un reto pendiente de las políticas sanitarias. [Care and follow-up for cancer survivors in Spain: a pending health policy challenge]. Rev Enfermería Oncológica 2021;23(1):3–7.
- 3. Marzorati C, Riva S and Pravettoni G. Who is a cancer survivor? A Systematic review of published definitions. J Cancer Educ 2017;32(2):228–237; doi: 10.1007/s13187-016-
- Irurita-Morales, P., Soto-Ruiz, N., Martín-Rodríguez, L. S., Escalada-Hernández, P., & García-Vivar, C. (2023). Use of Telehealth Among Cancer Survivors: A Scoping Review. *Telemedicine and E-Health*, 29(7), 956–985. https://doi.org/10.1089/tmj.2022.0351

- 5. Hwang N-K, Jung Y-J and Park J-S. Information and Communications Technology-Based Telehealth Approach for Occupational Therapy Interventions for Cancer Survivors: A Systematic Review. Healthcare 2020;8(4):355; doi: 10.3390/healthcare8040355.
- 6. Larson JL, Rosen AB and Wilson FA. The effect of telehealth interventions on quality of life of cancer survivors: A systematic review and meta-analysis. Health Informatics J 2020;26(2):1060–1078; doi: 10.1177/1460458219863604.
- 7. Gomaa S, West C, Lopez AM, et al. A telehealth-delivered Tai Chi intervention (TaiChi4Joint) for managing aromatase inhibitor—induced arthralgia in patients with Bbeast cancer during COVID-19: Longitudinal pilot study. JMIR Form Res 2022;6(6):e34995; doi: 10.2196/34995.
- 8. Bradbury-Jones C, Aveyard H, Herber OR, et al. Scoping reviews: the PAGER framework for improving the quality of reporting. Int J Soc Res Methodol 2022;25(4):457–470; doi: 10.1080/13645579.2021.1899596.
- 9. Arksey H and O'Malley L. Scoping studies: towards a methodological framework. Int J Soc Res Methodol 2005;8(1):19–32; doi: 10.1080/1364557032000119616.
- Peters M, Godfrey C, McInerney P, et al. Chapter 11: Scoping Reviews. In: JBI Manual
 Irurita-Morales, P., Soto-Ruiz, N., Martín-Rodríguez, L. S., Escalada-Hernández, P., & García-Vivar, C. (2023). Use of Telehealth Among Cancer Survivors: A Scoping Review. *Telemedicine and E-Health*, 29(7), 956–985. https://doi.org/10.1089/tmj.2022.0351

- for Evidence Synthesis. (Aromataris E and Munn Z. eds) JBI; 2020; doi: 10.46658/JBIMES-20-12.
- 11. Tricco AC, Lillie E, Zarin W, et al. PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and explanation. Ann Intern Med 2018;169(7):467–473; doi: 10.7326/M18-0850.
- 12. Syrjala KL, Yi JC, Artherholt SB, et al. An online randomized controlled trial, with or without problem-solving treatment, for long-term cancer survivors after hematopoietic cell transplantation. J Cancer Surviv 2018;12(4):560–570; doi: 10.1007/s11764-018-0693-9.
- 13. Wagner LI, Tooze JA, Hall DL, et al. Targeted eHealth intervention to reduce breast cancer survivors' fear of recurrence: Results from the FoRtitude randomized trial. JNCI J Natl Cancer Inst 2021;113(11):1495–1505; doi: 10.1093/jnci/djab100.
- 14. Abrahams HJG, Gielissen MFM, Goedendorp MM, et al. A randomized controlled trial of web-based cognitive behavioral therapy for severely fatigued breast cancer survivors (CHANGE-study): study protocol. BMC Cancer 2015;15(1):765; doi: 10.1186/s12885-015-1787-7.
- 15. Befort CA, Klemp JR, Fabian C, et al. Protocol and recruitment results from a randomized controlled trial comparing group phone-based versus newsletter interventions for weight loss maintenance among rural breast cancer survivors. Contemp Clin Trials 2014;37(2):261–271; doi: 10.1016/j.cct.2014.01.010.
- 16. Freeman LW, White R, Ratcliff CG, et al. A randomized trial comparing live and telemedicine deliveries of an imagery-based behavioral intervention for breast cancer
- Irurita-Morales, P., Soto-Ruiz, N., Martín-Rodríguez, L. S., Escalada-Hernández, P., & García-Vivar, C. (2023). Use of Telehealth Among Cancer Survivors: A Scoping Review. *Telemedicine and E-Health*, 29(7), 956–985. https://doi.org/10.1089/tmj.2022.0351

- survivors: reducing symptoms and barriers to care. Psychooncology 2015;24(8):910–918; doi: 10.1002/pon.3656.
- 17. Gorzelitz JS, Stoller S, Costanzo E, et al. Improvements in strength and agility measures of functional fitness following a telehealth-delivered home-based exercise intervention in endometrial cancer survivors. Support Care Cancer 2022;30(1):447–455; doi: 10.1007/s00520-021-06415-2.
- 18. Mihuta ME, Green HJ and Shum DHK. Efficacy of a web-based cognitive rehabilitation intervention for adult cancer survivors: A pilot study. Eur J Cancer Care (Engl) 2018;27(2):e12805; doi: 10.1111/ecc.12805.
- 19. Underhill ML, Hong F, Jones T, et al. Feasibility and acceptability of a web site to promote survivorship care in survivors of Hodgkin Disease. JCO Clin Cancer Informatics 2017;(1):1–10; doi: 10.1200/CCI.17.00012.
- Garrett K, Okuyama S, Jones W, et al. Bridging the transition from cancer patient to survivor: Pilot study results of the Cancer Survivor Telephone Education and Personal Support (C-STEPS) program. Patient Educ Couns 2013;92(2):266–272; doi: 10.1016/j.pec.2013.04.002.
- 21. Graetz I, McKillop CN, Stepanski E, et al. Use of a web-based app to improve breast cancer symptom management and adherence for aromatase inhibitors: a randomized controlled feasibility trial. J Cancer Surviv 2018;12(4):431–440; doi: 10.1007/s11764-018-0682-z.
- 22. Grant M, Sun V, Tallman NJ, et al. Cancer survivors' greatest challenges of living with an
- Irurita-Morales, P., Soto-Ruiz, N., Martín-Rodríguez, L. S., Escalada-Hernández, P., & García-Vivar, C. (2023). Use of Telehealth Among Cancer Survivors: A Scoping Review. *Telemedicine and E-Health*, 29(7), 956–985. https://doi.org/10.1089/tmj.2022.0351

- ostomy: findings from the Ostomy Self-Management Telehealth (OSMT) randomized trial. Support Care Cancer 2022;30(2):1139–1147; doi: 10.1007/s00520-021-06449-6.
- 23. Harder H, Holroyd P, Burkinshaw L, et al. A user-centred approach to developing bWell, a mobile app for arm and shoulder exercises after breast cancer treatment. J Cancer Surviv 2017;11(6):732–742; doi: 10.1007/s11764-017-0630-3.
- 24. Harvey J, Dittus K and Mench E. EHealth and behavioral weight loss interventions for female cancer survivors: A review. Women's Heal 2017;13(3):80–88; doi: 10.1177/1745505717731012.
- 25. Jhaveri K, Cohen JA, Barulich M, et al. "Soup cans, brooms, and Zoom:" Rapid conversion of a cancer survivorship program to telehealth during COVID-19.
 Psychooncology 2020;29(9):1424–1426; doi: 10.1002/pon.5473.
- 26. Kapoor A and Nambisan P. Usability and acceptance evaluation of ACESO: a Web-based breast cancer survivorship tool. J Cancer Surviv 2018;12(3):316–325; doi: 10.1007/s11764-017-0670-8.
- 27. Lee H, Uhm KE, Cheong IY, et al. Patient satisfaction with mobile health (mHealth) application for exercise intervention in breast cancer survivors. J Med Syst 2018;42(12):254; doi: 10.1007/s10916-018-1096-1.
- 28. Paxton RJ, Nayak P, Taylor WC, et al. African-American breast cancer survivors' preferences for various types of physical activity interventions: a Sisters Network Inc. web-based survey. J Cancer Surviv 2014;8(1):31–38; doi: 10.1007/s11764-013-0307-5.
- Puszkiewicz P, Roberts AL, Smith L, et al. Assessment of cancer survivors' experiences
 Irurita-Morales, P., Soto-Ruiz, N., Martín-Rodríguez, L. S., Escalada-Hernández, P., & García-Vivar, C. (2023). Use of Telehealth Among Cancer Survivors: A Scoping Review. *Telemedicine and E-Health*, 29(7), 956–985. https://doi.org/10.1089/tmj.2022.0351

- of using a publicly available physical activity mobile application. JMIR Cancer 2016;2(1):e7; doi: 10.2196/cancer.5380.
- 30. Bender JL, Wiljer D, Sawka AM, et al. Thyroid cancer survivors' perceptions of survivorship care follow-up options: a cross-sectional, mixed-methods survey. Support Care Cancer 2016;24(5):2007–2015; doi: 10.1007/s00520-015-2981-5.
- 31. Ridner SH, Dietrich MS, Davis AJ, et al. A randomized clinical trial comparing the impact of a web-based multimedia intervention versus an educational pamphlet on patient outcomes in breast cancer survivors with chronic secondary lymphedema. J Women's Heal 2020;29(5):734–744; doi: 10.1089/jwh.2019.7676.
- 32. Short C, Rebar A, James E, et al. How do different delivery schedules of tailored webbased physical activity advice for breast cancer survivors influence intervention use and efficacy? J Cancer Surviv 2017;11(1):80–91; doi: 10.1007/s11764-016-0565-0.
- 33. Sprague S and Holschuh C. Telemedicine versus clinic visit: A pilot study of patient satisfaction and recall of diet and exercise recommendations from survivorship care plans. Clin J Oncol Nurs 2019;23(6):639–646; doi: 10.1188/19.CJON.639-646.
- 34. Blair CK, Harding E, Wiggins C, et al. A home-based mobile health intervention to replace sedentary time with light physical activity in older cancer survivors: Randomized controlled pilot trial. JMIR Cancer 2021;7(2):e18819; doi: 10.2196/18819.
- 35. Cox A and Faithfull S. Aiding a reassertion of self: a qualitative study of the views and experiences of women with ovarian cancer receiving long-term nurse-led telephone follow-up. Support Care Cancer 2015;23(8):2357–2364; doi: 10.1007/s00520-014-2578-4.
- Irurita-Morales, P., Soto-Ruiz, N., Martín-Rodríguez, L. S., Escalada-Hernández, P., & García-Vivar, C. (2023). Use of Telehealth Among Cancer Survivors: A Scoping Review. *Telemedicine and E-Health*, 29(7), 956–985. https://doi.org/10.1089/tmj.2022.0351

- 36. Duffecy J, Sanford S, Wagner L, et al. Project onward: an innovative e-health intervention for cancer survivors. Psychooncology 2013;22(4):947–951; doi: 10.1002/pon.3075.
- 37. Galiano-Castillo N, Ariza-García A, Cantarero-Villanueva I, et al. Telehealth system (e-CUIDATE) to improve quality of life in breast cancer survivors: rationale and study protocol for a randomized clinical trial. Trials 2013;14(1):187; doi: 10.1186/1745-6215-14-187.
- 38. Galiano-Castillo N, Ariza-García A, Cantarero-Villanueva I, et al. Agreement between telerehabilitation involving caregivers and face-to-face clinical assessment of lymphedema in breast cancer survivors. Support Care Cancer 2014;22(1):253–258; doi: 10.1007/s00520-013-1971-8.
- 39. Galiano-Castillo N, Cantarero-Villanueva I, Fernández-Lao C, et al. 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(20):3166–3174; doi: 10.1002/cncr.30172.
- 40. Galiano-Castillo N, Arroyo-Morales M, Lozano-Lozano M, et al. Effect of an Internet-based telehealth system on functional capacity and cognition in breast cancer survivors: a secondary analysis of a randomized controlled trial. Support Care Cancer 2017;25(11):3551–3559; doi: 10.1007/s00520-017-3782-9.
- 41. Lee MK, Yun YH, Park H-A, et al. A Web-based self-management exercise and diet intervention for breast cancer survivors: Pilot randomized controlled trial. Int J Nurs Stud 2014;51(12):1557–1567; doi: 10.1016/j.ijnurstu.2014.04.012.
- Irurita-Morales, P., Soto-Ruiz, N., Martín-Rodríguez, L. S., Escalada-Hernández, P., & García-Vivar, C. (2023). Use of Telehealth Among Cancer Survivors: A Scoping Review. *Telemedicine and E-Health*, 29(7), 956–985. https://doi.org/10.1089/tmj.2022.0351

- 42. Ferrell BR, Hassey-Dow K and Grant M. Quality of Life Patient/Cancer Survivor Version (QOL-CSV). 2012. Available from: https://www.midss.org/sites/default/files/qol-cs.pdf.
- 43. van de Wiel HJ, Stuiver MM, May AM, et al. Effects of and lessons learned from an internet-based physical activity support program (with and without physiotherapist telephone counselling) on physical activity levels of breast and prostate cancer survivors: The PABLO randomized controlled Trial. Cancers (Basel) 2021;13(15):3665; doi: 10.3390/cancers13153665.
- 44. Ritvo P, Obadia M, Santa Mina D, et al. Smartphone-enabled health coaching intervention (iMOVE) to promote long-term maintenance of physical activity in breast cancer survivors: Protocol for a feasibility pilot randomized controlled trial. JMIR Res Protoc 2017;6(8):e165; doi: 10.2196/resprot.6615.
- 45. Kanera IM, Willems RA, Bolman CAW, et al. Long-term effects of a web-based cancer aftercare intervention on moderate physical activity and vegetable consumption among early cancer survivors: a randomized controlled trial. Int J Behav Nutr Phys Act 2017;14(1):19; doi: 10.1186/s12966-017-0474-2.
- 46. Ligibel JA, Meyerhardt J, Pierce JP, et al. Impact of a telephone-based physical activity intervention upon exercise behaviors and fitness in cancer survivors enrolled in a cooperative group setting. Breast Cancer Res Treat 2012;132(1):205–213; doi: 10.1007/s10549-011-1882-7.
- 47. Hardcastle SJ, Hince D, Jiménez-Castuera R, et al. Promoting physical activity in regional and remote cancer survivors (PPARCS) using wearables and health coaching: randomised
- Irurita-Morales, P., Soto-Ruiz, N., Martín-Rodríguez, L. S., Escalada-Hernández, P., & García-Vivar, C. (2023). Use of Telehealth Among Cancer Survivors: A Scoping Review. *Telemedicine and E-Health*, 29(7), 956–985. https://doi.org/10.1089/tmj.2022.0351

- controlled trial protocol. BMJ Open 2019;9(5):e028369; doi: 10.1136/bmjopen-2018-028369.
- 48. Kanera IM, Bolman CAW, Willems RA, et al. Lifestyle-related effects of the web-based Kanker Nazorg Wijzer (Cancer Aftercare Guide) intervention for cancer survivors: a randomized controlled trial. J Cancer Surviv 2016;10(5):883–897; doi: 10.1007/s11764-016-0535-6.
- 49. Willems RA, Mesters I, Lechner L, et al. Long-term effectiveness and moderators of a web-based tailored intervention for cancer survivors on social and emotional functioning, depression, and fatigue: randomized controlled trial. J Cancer Surviv 2017;11(6):691–703; doi: 10.1007/s11764-017-0625-0.
- 50. Van Den Berg SW, Gielissen MFM, Custers JAE, et al. BREATH: Web-based self-management for psychological adjustment after primary breast cancer-results of a multicenter randomized controlled trial. J Clin Oncol 2015;33(25):2763–2771; doi: 10.1200/JCO.2013.54.9386.
- 51. Børøsund E, Ehlers SL, Varsi C, et al. Results from a randomized controlled trial testing StressProffen: an application-based stress-management intervention for cancer survivors. Cancer Med 2020;9(11):3775–3785; doi: 10.1002/cam4.3000.
- 52. Tagai EK, Miller SM, Hudson S V., et al. Improved cancer coping from a web-based intervention for prostate cancer survivors: A randomized controlled trial. Psychooncology 2021;30(9):1466–1475; doi: 10.1002/pon.5701.
- 53. van der Hout A, van Uden-Kraan CF, Holtmaat K, et al. Role of eHealth application
- Irurita-Morales, P., Soto-Ruiz, N., Martín-Rodríguez, L. S., Escalada-Hernández, P., & García-Vivar, C. (2023). Use of Telehealth Among Cancer Survivors: A Scoping Review. *Telemedicine and E-Health*, 29(7), 956–985. https://doi.org/10.1089/tmj.2022.0351

- Oncokompas in supporting self-management of symptoms and health-related quality of life in cancer survivors: a randomised, controlled trial. Lancet Oncol 2020;21(1):80–94; doi: 10.1016/S1470-2045(19)30675-8.
- 54. Lyons KD, Hull JG, Kaufman PA, et al. Development and initial evaluation of a telephone-delivered, behavioral activation, and problem-solving treatment program to address functional goals of breast cancer survivors. J Psychosoc Oncol 2015;33(2):199–218; doi: 10.1080/07347332.2014.1002659.
- 55. Yanez BR, Buitrago D, Buscemi J, et al. Study design and protocol for My Guide: An ehealth intervention to improve patient-centered outcomes among Hispanic breast cancer survivors. Contemp Clin Trials 2018;65:61–68; doi: 10.1016/j.cct.2017.11.018.
- 56. Yanez B, Oswald LB, Baik SH, et al. Brief culturally informed smartphone interventions decrease breast cancer symptom burden among Latina breast cancer survivors.
 Psychooncology 2020;29(1):195–203; doi: 10.1002/pon.5281.
- 57. Meneses K, Gisiger-Camata S, Benz R, et al. Telehealth intervention for Latina breast cancer survivors: A pilot. Women's Heal 2018;14:174550651877872; doi: 10.1177/1745506518778721.
- 58. Lawler S, Maher G, Brennan M, et al. Get Healthy after Breast Cancer examining the feasibility, acceptability and outcomes of referring breast cancer survivors to a general population telephone-delivered program targeting physical activity, healthy diet and weight loss. Support Care Cancer 2017;25(6):1953–1962; doi: 10.1007/s00520-017-3599-6.
- Irurita-Morales, P., Soto-Ruiz, N., Martín-Rodríguez, L. S., Escalada-Hernández, P., & García-Vivar, C. (2023). Use of Telehealth Among Cancer Survivors: A Scoping Review. *Telemedicine and E-Health*, 29(7), 956–985. https://doi.org/10.1089/tmj.2022.0351

- 59. Willems RA, Bolman CA, Mesters I, et al. The Kanker Nazorg Wijzer (Cancer Aftercare Guide) protocol: the systematic development of a web-based computer tailored intervention providing psychosocial and lifestyle support for cancer survivors. BMC Cancer 2015;15(1):580; doi: 10.1186/s12885-015-1588-z.
- 60. Willems RA, Bolman CAW, Mesters I, et al. Short-term effectiveness of a web-based tailored intervention for cancer survivors on quality of life, anxiety, depression, and fatigue: randomized controlled trial. Psychooncology 2017;26(2):222–230; doi: 10.1002/pon.4113.
- 61. Yun YH, Lee KS, Kim YW, et al. Web-based tailored education program for disease-free cancer survivors with cancer-related fatigue: A randomized controlled trial. J Clin Oncol 2012;30(12):1296–1303; doi: 10.1200/JCO.2011.37.2979.
- 62. Sun V, Ercolano E, McCorkle R, et al. Ostomy telehealth for cancer survivors: Design of the Ostomy Self-management Training (OSMT) randomized trial. Contemp Clin Trials 2018;64:167–172; doi: 10.1016/j.cct.2017.10.008.
- van der Hout A, van Uden-Kraan CF, Holtmaat K, et al. Reasons for not reaching or using web-based self-management applications, and the use and evaluation of Oncokompas among cancer survivors, in the context of a randomised controlled trial. Internet Interv 2021;25:100429; doi: 10.1016/j.invent.2021.100429.
- 64. Buscemi J, Buitrago D, Iacobelli F, et al. Feasibility of a Smartphone-based pilot intervention for Hispanic breast cancer survivors: a brief report. Transl Behav Med 2019;9(4):638–645; doi: 10.1093/tbm/iby058.
- Irurita-Morales, P., Soto-Ruiz, N., Martín-Rodríguez, L. S., Escalada-Hernández, P., & García-Vivar, C. (2023). Use of Telehealth Among Cancer Survivors: A Scoping Review. *Telemedicine and E-Health*, 29(7), 956–985. https://doi.org/10.1089/tmj.2022.0351

- 65. Duman-Lubberding S, van Uden-Kraan CF, Jansen F, et al. Feasibility of an eHealth application "OncoKompas" to improve personalized survivorship cancer care. Support Care Cancer 2016;24(5):2163–2171; doi: 10.1007/s00520-015-3004-2.
- 66. Badr H, Lipnick D, Diefenbach MA, et al. Development and usability testing of a webbased self-management intervention for oral cancer survivors and their family caregivers.

 Eur J Cancer Care (Engl) 2016;25(5):806–821; doi: 10.1111/ecc.12396.
- 67. Meneses K, Pisu M, Azuero A, et al. A telephone-based education and support intervention for Rural Breast Cancer Survivors: a randomized controlled trial comparing two implementation strategies in rural Florida. J Cancer Surviv 2020;14(4):494–503; doi: 10.1007/s11764-020-00866-y.
- 68. van der Hout A, Holtmaat K, Jansen F, et al. The eHealth self-management application 'Oncokompas' that supports cancer survivors to improve health-related quality of life and reduce symptoms: which groups benefit most? Acta Oncol (Madr) 2021;60(4):403–411; doi: 10.1080/0284186X.2020.1851764.
- 69. Willems RA, Mesters I, Lechner L, et al. Long-term effectiveness and moderators of a web-based tailored intervention for cancer survivors on social and emotional functioning, depression, and fatigue: randomized controlled trial. J Cancer Surviv 2017;11(6):691–703; doi: 10.1007/s11764-017-0625-0.
- 70. van der Hout A, Jansen F, van Uden-Kraan CF, et al. Cost-utility of an eHealth application 'Oncokompas' that supports cancer survivors in self-management: results of a randomised controlled trial. J Cancer Surviv 2021;15(1):77–86; doi: 10.1007/s11764-020-
- Irurita-Morales, P., Soto-Ruiz, N., Martín-Rodríguez, L. S., Escalada-Hernández, P., & García-Vivar, C. (2023). Use of Telehealth Among Cancer Survivors: A Scoping Review. *Telemedicine and E-Health*, 29(7), 956–985. https://doi.org/10.1089/tmj.2022.0351

00912-9.

- 71. Earle CC. Failing to plan is planning to fail: improving the quality of care with survivorship care plans. J Clin Oncol 2006;24(32):5112–5116; doi: 10.1200/JCO.2006.06.5284.
- 72. Hill RE, Wakefield CE, Cohn RJ, et al. Survivorship care plans in cancer: A meta-analysis and systematic review of care plan outcomes. Oncologist 2020;25(2):e351–e372; doi: 10.1634/theoncologist.2019-0184.
- 73. Burbury K, Wong Z, Yip D, et al. Telehealth in cancer care: during and beyond the COVID-19 pandemic. Intern Med J 2021;51(1):125–133; doi: 10.1111/imj.15039.

Table 1. Main Characteristics of the Included Studies

Author (year) Country	Purpose	Period of Survival	Design Methods	Participants Type of Cancer	Type of Telehealth	Main Results
Abrahams et al., ⁴ (2015) Netherlands	To assess the efficacy of web-based cognitive behavioral therapy compared with usual care for severely fatigued breast cancer survivors.	≥3 months. Posttreatment	Study protocol: Randomized controlled trial The intervention group receives webbased cognitive behavioral therapy. The usual care group receives face-to-face conventional cognitive behavioral therapy.	N= 132 Breast cancer	Website Video conference	Not applicable
Badr et al., ⁶⁶ (2016) USA	Develop and evaluate a web- based dyadic intervention to improve survivor self- management and survivor/caregiver quality of life.	≤1 year	Qualitative study Semi-structured interviews of 60 minutes, usability tests and user tests.	N= 16 (8 oral cancer) cancer survivors and 12 caregivers.	Website	Users rated the site's usability favorably with a score of 80/100. Usability testing revealed some issues with the site's intuitiveness. Users wanted clearer instructions for interacting with website features. All participants found the content relevant and useful and indicated that they would recommend other survivors/caregivers to use it.
Befort et al., ¹⁵ (2014) USA	To compare different methods of providing long-term care for weight loss maintenance among breast cancer survivors in rural areas.	≥3 months	Study protocol: Clinical trial Phase I (months 0 to 6): All breast cancer survivors receive a behavioral intervention to lose weight through group telephone sessions. Those who successfully lose 5% of their weight enter Phase II (months 6 to 18): They are randomly assigned to one of two extended care arms: ongoing group treatment by phone or a newsletter by mail. Phase III: No contact is made (months 18 to 24).	N= 210 Breast cancer	Group phone call	Not applicable

Bender et al., ³⁰ (2016) Canada	To investigate perceived satisfaction and perceptions of thyroid cancer survivors with follow-up options for survivorship care.	Posttreatment	Cross-sectional mixed methods Participants completed a questionnaire assessing perceived satisfaction with medical follow-up care and Internet (email or video conference) follow-up.	N= 202 Thyroid cancer	E-mail Video conference	Most would be satisfied with a specialized follow-up (surgeon, oncologist or endocrinologist) (90.6%) or a shared care model that integrates specialists with primary care (67.5%). A third (32%) would be satisfied with video-based follow-up and 26% with specialized email follow-up, 15% with primary care only.
Blair et al., ³⁴ (2021) Mexico	To assess the feasibility, acceptability, and preliminary efficacy of a mobile home health (mHealth) intervention to interrupt and replace sedentary time with lowintensity physical activity (standing and treading). To examine changes in objective measures of physical activity, physical performance, and self-reported quality of life.	Posttreatment	Intervention participants received a Jawbone UP2 activity monitor to use with the mobile phone app for 13 weeks. Technical support and health advice were provided through 5 telephone calls during the 13-week intervention. Sedentary behavior and physical activity were objectively measured using an activPAL monitor for 7 days before and after the intervention.	N= 54 Breast, prostate cancers and others (not specified)	Mobile app	There were no significant differences between groups in total sedentary time, number of breaks, or number of prolonged sedentary episodes. There were no significant differences between the groups in physical activity. The only significant change occurred in the health coaching group, which increased by 1,675 steps per day. This increase was caused by moderate intensity steps rather than light intensity steps.
Børøsund et al., ⁵¹ (2020) Norway	To assess the preliminary efficacy of an app-based cancer stress management intervention, StressProffen.	≤1 year posttreatment	Randomized controlled trial Participants received a combined model of care: a face-to-face introductory session; 10 cognitive-behavioral stress management modules through the app; Follow-up phone calls at weeks 2-3 and 6-7.	N= 172 (n = 84 intervention and n = 88 control group) Different types of cancer (not specified) & majority (48%) breast cancer	Mobile app Phone call	A decrease in stress and an improvement in health-related quality of life, Social Functioning, Role Emotional and Mental Health were observed. No significant changes were observed for anxiety or depression.
Buscemi et al., ⁶⁴ (2019)	To describe the feasibility results of a 4-week pilot trial testing My Guide	3-24 months Posttreatment	Pilot trial Participants used the app for 3 hours/week for 4 weeks. They	N= 25 Breast cancer	Mobile app Phone call	Participants' health-related quality of life scores improved over 4 weeks, but these improvements were not statistically

USA	among Hispanic breast cancer survivors.		completed the Functional Assessment of Cancer Questionnaire: (FACT-G7) which was available in the My Guide app. Weekly 15-minute telecoaching calls were held in weeks 2-4.			significant. Overall, My Guide was feasible and acceptable.
Cox et al., ³⁵ (2015) UK	To explore women's views and experiences of long-term telephone follow-up for ovarian cancer and to consider the impact of this approach on cancer survivorship adjustment.	Posttreatment	Phenomenology Semi-structured interviews	N= 11 Ovarian cancer	Phone call	The telephone follow-up carried out by nurses helped reduce the rejection of the patient's identity, made them feel cared for, with greater psychosocial support, gave patients peace of mind and indefinite time to talk.
Duffey et al., ³⁶ (2013) USA	To examine the feasibility and acceptability of an Individual Internet Intervention embedded in an Internet Support Group with the goal of improving adherence and learning, compared to an individual Internet invention alone.	Posttreatment	Randomized controlled trial 8 weeks of individual internet intervention combined with internet support group or 8 weeks of only individual internet intervention.	N=31 Breast, gynecological, lung, colon, thyroid cancers & sarcoma	Website	All participants with depressive symptoms at baseline, regardless of assigned status, showed large reductions on the HADS depression scale. High utilization rates were observed compared to other web-based depression treatments.
Duman- Lubberdin g et al., ⁶⁵ (2016) Netherlands	To investigate the feasibility of an online self-management application (OncoKompas) among cancer survivors.	≤2 years Posttreatment	Pretest-posttest, conducting a survey before providing access to OncoKompas, and 2 weeks later an interview was conducted by a nurse.	N= 56 Head and neck cancer	Mobile app	OncoKompas was feasible with an adoption rate of 64%, an implementation rate of 75-91%, an average satisfaction score of 7.3, and a positive NPS (Net Promoter Score) (1.9). Sociodemographic and clinical factors and quality of life were not associated with satisfaction.
Freeman et al., ¹⁶ (2015) USA	To assess the quality-of-life benefits of a group image- based intervention entitled: 'Visualize the rhythms of life'.	≥6 weeks Posttreatment	Randomized controlled trial Five weekly 4-hour group sessions in a community center with therapist broadcast via videoconference, or on a control waiting list. Weekly individual phone calls were made to encourage practice at home, beginning at session one and continuing up to 3-month follow-up.	N= 118 Breast cancer	Video conference Phone call	Results revealed less fatigue, cognitive dysfunction, and sleep disturbance in the therapist present group and that of the therapist transmitted via videoconference compared to the control waiting list group.

Galiano- Castillo et al., ³⁷ (2013) Spain	To investigate the feasibility and efficacy of a telerehabilitation system after adjuvant treatment of patients with breast cancer.	Posttreatment	Study protocol: Two-arm, blinded, parallel randomized controlled trial Participants randomly distributed into e- CUIDATE program or usual care for the control group. Assessment after 8 weeks (immediate effects) and after 6 months.	N= 80 Breast cancer	Website	Not applicable
Galiano- Castillo et al., ³⁸ (2014) Spain	To determine the level of agreement between the evaluation of lymphedema by telerehabilitation and by the traditional face-to-face method.	Posttreatment	Descriptive design Tele-rehabilitation clinical sessions, face-to-face and online (in real time), as well as lymphedema evaluation. Interval of 120 minutes between these two sessions. The order of sessions was randomly selected for each patient. A caregiver (family member or friend) performed the telerehabilitation assessment.	N= 30 Breast cancer	Website	All outcome measures showed reliability estimates $(\alpha) \ge 0.90$; the lowest reliability was obtained for the total volume of the unaffected side $(\alpha=0.90)$. The diagnosis of lymphedema by the two methods also showed good interrater reliability. This supports the use of an internet-based system to assess lymphedema.
Galiano- Castillo et al., ³⁹ (2016) Spain	To investigate the effectiveness of a telehealth system in improving adverse events after an 8-week intervention and its maintenance after 6-month follow-up in breast cancer survivors.	Posttreatment	Two-arm, blinded, parallel randomized controlled trial Participants were randomly assigned to the experimental group (8-week Internet-based personalized exercise program) or the control group (usual care). Assessment at baseline, after the intervention and at 6-month follow-up.	N= 81 Breast cancer	Website	Compared with the control group, the telerehabilitation group had significantly improved global health status, physical, function, cognitive functioning, and arm symptom scores, less pain severity, less total fatigue, and unaffected lateral grip (p < 0.001). Effects were maintained after 6 months of follow-up, except for function, pain severity, and unaffected lateral grip.
Galiano- Castillo et al., ⁴⁰ (2017) Spain	To determine the effect of a personalized Internet-based exercise program compared with usual care control in improving functional ability and cognition among breast cancer survivors.	Posttreatment	Two-arm, evaluator-blinded, parallel randomized controlled trial Participants were randomly assigned to the experimental group (an 8-week Internet-based personalized exercise program) or the control group (usual care). All were evaluated at baseline,	N= 81 Breast cancer	Website	The telerehabilitation group had significantly improved distances as well as percent prediction of the 6-minute walk test compared to the control group. A significant improvement in favor of the telerehabilitation group was also observed for the number of consonants recalled in total, compared to the control group. These findings were maintained after a 6-month follow-up.

			after the intervention and at 6-month follow-up.			
Garrett et al., ²⁰ (2013) USA	To develop a feasibility study of a theory-based telephone counseling program to improve the psychosocial and physical well-being of cancer survivors after treatment.	Posttreatment	Qualitative study Participants were recruited with self- administered questionnaires at baseline and two weeks after the intervention. Up to six thematic telephone counseling sessions over three months were included.	N= 66 Skin, prostate, breast cancer, head and neck and others (not specified)	Phone call	Median satisfaction was 9 out of 10, and all participants would recommend C-STEPS to other survivors. Cancer-specific distress decreased in the entire study population and in stress management session participants. The consumption of fruits and vegetables increased in the participants of the nutrition and exercise session and in the entire sample. Physical activity increased in the whole group and especially in the participants of the nutrition and exercise session.
Gorzelitz et al., ¹⁷ (2022) USA	To describe the physiological and functional changes after a home strength training intervention.	≥10 weeks Posttreatment	Randomized pilot trial The participants performed the exercises in a supervised manner twice a week for 10 weeks and with a 5-week follow-up. All attended an evaluation visit at week 1 (baseline) and at week 10 (post-intervention). At these visits, physical measurements of the participants were taken.	N= 40 Endometrial cancer	Mobile app	At the beginning of the study, the participants had 51.2% body fat, which was not different between the different groups. Improvements were seen in the 30-sec chair sit-to-stand test, the 30-sec arm curl call, and the 8-step walk-to-stand test. No changes were measured for HbA1c or C-reactive protein. No changes were observed in flexibility (chair sitting and reaching, back scratch tests), 6-minute walk test, max grip test, anxiety, depression, fatigue, or exercise self-efficacy.
Graetz et al., ²¹ (2018) USA	To test the use of a web- based application designed with and without weekly reminders. Improve symptom burden and medication adherence.	Posttreatment	Randomized controlled trial Participants with a new aromatase inhibitor (AIs) prescription were randomly assigned to the App + Reminder (weekly reminders to use the app) or App (no reminders) group. Preand post-test data were collected from all participants.	N= 44 Breast cancer	Mobile app	Participants in the App + Reminder group had a higher weekly app usage rate during the intervention and reported greater adherence to AIs at 8 weeks. The increase in symptom burden was greater for the App group compared to the App + Reminder group but was not statistically significant.
Grant et al., ²² (2022) USA	To describe the greatest self- reported challenges encountered by survivors in ostomy care, according to	Post- intervention for the creation of a	Randomized controlled trial Survivors participating in a prospective randomized trial of an ostomy selfmanagement telehealth (OSMT) versus usual care (UC) program were surveyed.	N= 118 Cancer of the urinary or intestinal tract.	Video conference	OSMT contributed 187 comments and usual care contributed 235 comments. Most comments were about ostomy-specific issues and social welfare. Usual care contributed more comments in all domains except physical

	study arm (OSMT or Usual Care) and ostomy type	urinary or fecal stoma.	An open-ended question about the biggest challenges after ostomy surgery was used.			well-being. It was observed that: postoperative and treatment-related problems, as well as going out in public were the most common challenges in both groups.
Hardcastle et al., ⁴⁴ (2019) Australia	To increase physical activity from moderate to vigorous among cancer survivors living in the region and in remote Western Australia.	≤5 years Posttreatment	Study protocol: Randomized controlled trial Those in the intervention group will receive an advanced health and activity bracelet (Fitbit) and up to six telephone health coaching sessions. The evaluation will be carried out at the beginning, at 12 and at 24 weeks.	N= 86 Breast, prostate, colorectal and uterine cancers	Activity and health bracelet Video conference Phone call	Not applicable
Harder et al., ²³ (2017) UK	To develop a mobile application supported by user preferences to optimize self-management of arm and shoulder exercises for upper extremity dysfunction after breast cancer treatment.	Post intervention to perform an axillary lymphadenect omy / post radiotherapy	Qualitative study Phase 1: design the Well App. Focus groups with breast cancer patients were conducted to identify user needs and requirements. Phase 2: collect feedback. Preliminary tests were carried out to obtain user feedback: breast cancer patients who used the app for 8 weeks after surgery.	N= 9 Breast cancer	Mobile app	Participants identified and prioritized several app features: personalized insights, exercise video demonstrations, push notifications, and progress and tracking features. The evidence-based program was developed. The first user tests demonstrated ease of use and clear and motivating application content.
Harvey et al., ²⁴ (2017) UK	To assess the efficacy and current limitations of remote and eHealth/mHealth interventions for weight loss in female cancer survivors.	Posttreatment	Literature review. Not applicable	Breast & endometrial cancers	Activity and health bracelet Phone call E-mail	Remote weight loss programs make weight loss and maintenance easy. However, most studies have been conducted in breast cancer survivors, so these conclusions are primarily limited to this subgroup of survivors. Furthermore, the link between weight loss and actual improvement in survival has not yet been firmly established.
Hwang et al., ⁵ (2020) Switzerland	To review telehealth approaches in occupational therapy outreach and outcome factors affecting participation.	Posttreatment	Literature review. Not applicable	Breast, prostate, hematopoietic, endometrial cancers, and others (not specified)	Phone call Website Mobile app	Physical activity had a positive effect on physical and cognitive function. Symptom self-management showed positive effects on alleviating symptom burden. Psychosocial interventions including cognitive behavioral therapy, problem solving, cognitive behavioral therapy for insomnia, mind-body training, and reduction of sleep disturbances improved

						physical activity. These interventions reduced cancer-related symptoms such as pain, depression, fatigue, distress, and improved quality of life.
Jhaveri et al., ²⁴ (2020) USA	To explain the rapid move to telehealth and COVID-19 content from the Survival Wellness Group Program (SWGP), an evidence-based health behavior change program.	Posttreatment	Report Transitioned from Survival Wellness Groups Program to Zoom in 14 days. Operational efforts focused on ensuring patient safety, confidentiality, quality of experience, comfort with technology, and engagement.	Type of cancer not specified	Video conference	The use telehealth during COVID-19 pandemic increased accessibility and broadened the reach of the program while maintaining the quality of the intervention and its foundation in behavior. With the conversion to telehealth, program attendance tripled.
Kanera et al., ⁴⁵ (2016) Netherlands	To assess the overall effects of the web-based intervention called Kanker Nazorg Wijzer (Cancer Aftercare Guide) and the effects of using specific components on the consumption of vegetables, fruits, bread and fish, physical activity, and habit of smoking.	4-56 weeks Posttreatment	Randomized controlled trial Participants were randomly assigned to the intervention condition or the control condition of usual care. Random assignment (1:1 ratio) was performed automatically by means of a digital randomizer after centralized registration of participants.	N= 432 Breast cancer and others (Not specified)	Website	Access to the intervention resulted in an increase in moderate physical activity and consumption of vegetables, fruit, and fish. It did not have a significant result on tobacco consumption due to the low number of smoking participants.
Kanera et al., ⁴⁹ (2017) Netherlands	To assess the effects at 12 months of performing a fully automated web-based intervention performed in post-cancer treatment. To investigate whether the previously determined 6-month effects on moderate physical activity and vegetable intake were sustained over 12 months.	4-56 weeks Posttreatment	Participants were divided into an intervention group and a usual care control group. Online self-report questionnaires were used among survivors of various types of cancer. The intervention group had access to the online intervention for 6 months and the control group received access after 12 months. Multilevel linear regression analyzes (complete cases and intention-to-treat) were performed to explore effects at 12 months.	N= 462 Breast cancer and others (Not specified)	Website	Online intervention for post-cancer treatment is effective in increasing and maintaining long-term moderate physical activity among younger cancer survivors (<57 years). However, vegetable consumption was not maintained in the long term. Among participants aged 57 years and older, the intervention was not effective. Therefore, this group may need different or additional support to increase physical activity.

Kapoor et al., ²⁶ (2018) USA	To design and develop a custom web application to help posttreatment breast cancer survivors as they face challenges such as comorbidities and treatment side effects.	Posttreatment	Mixed methods Individual interviews and surveys among a group of breast cancer survivors was combined. To determine user acceptance and usability tests. User feedback on their perceived value of the app was collected and any user interface issues that could hamper overall usability were identified.	N= 15 Breast cancer	Mobile App Artificial intelligence	The app's portability and ability to organize all your breast cancer-related medical history, as well as tracking various quality-of-life indicators, were perceived as valuable features by users. The app had high usability overall; however, some sections of the app weren't as intuitive to locate. The visual elements of the website were appreciated; however, the overall experience would benefit from the addition of more sociable elements that allow for positive reinforcement and provide a friendlier experience.
Larson et al., ⁶ (2020) USA	To conduct a systematic review and meta-analysis comparing the effect of telehealth interventions and usual care on the quality of life of cancer survivors.	Posttreatment	Systematic review Not applicable	Not applicable Breast, colorectal, esophagus, uterine cancers, and others (not specified)	Phone call Video conference Website	Analyzes indicated that telehealth interventions demonstrated large improvements compared to usual care in terms of quality of life.
Lawler et al., ⁵⁸ (2017) Australia	To assess the feasibility, acceptability, and outcomes of referring breast cancer survivors to the 'Get Healthy Service' (GHS), a statefunded 6-month lifestyle program delivered by telephone.	< 3 years Posttreatment	Pre and posttest of a single group Feasibility was assessed by assimilation and completion of the GHS; acceptability was assessed by patient satisfaction and nurse feedback. Changes in weight, physical activity, diet, quality of life (QoL), and fatigue were examined from baseline to 6 months.	N= 53 Breast cancer	Phone call	Nearly all (92%) of the study completers had high satisfaction rates and nurses provided positive feedback. GHS completers had a significant effect from baseline to 6 months on weight loss and total minutes of physical activity per week. However, there were no significant changes in the servings of fruit or vegetables consumed per day or the frequency of fast food and takeout consumed per week. A significant improvement was seen in mental quality of life but not in physical quality of life or fatigue.
Lee et al., ⁴¹ (2014)	To investigate whether web- based diet and exercise self-	< 12 months Posttreatment	Retrospective review of prospectively collected multicenter data	N= 59. Breast cancer	Website SMS	The proportion of subjects who performed at least moderate-intensity aerobic exercise for at

South Korea	management was a feasible and effective method for promoting exercise and dietary behaviors in breast cancer patients.		12-week exercise program via mobile phone app with pedometer. Physiatrists prescribed personalized programs that included aerobic and resistance exercises. In addition, telephone counseling was carried out at the 3rd and 9th weeks. All patients completed the user satisfaction questionnaire at the end of the intervention.		Artificial intelligence	least 150 minutes per week; ate 5 servings of fruits and vegetables per day; had overall improvements in diet quality, improved physical functioning, improved appetite, improved fatigue, and motivational disposition was higher in the intervention group than in the control group. Self-efficacy regarding exercise and fruit and vegetable consumption was higher in the intervention group than in the control group.
Lee et al., ²⁷ (2018) South Korea	To assess user satisfaction with mobile health (mHealth) application in breast cancer survivors after a 12-week exercise program and to provide developers with benchmarks from the perspective of patients and physicians for future mHealth applications.	Posttreatment	Retrospective review of prospectively collected multicenter data 12-week exercise program via mobile phone app with pedometer. Physiatrists prescribed personalized programs that included aerobic and resistance exercises. In addition, telephone counseling was carried out at the 3rd and 9th weeks. All patients completed the user satisfaction questionnaire at the end of the intervention.	N= 88 Breast cancer	Mobile app	The mean overall satisfaction score rated on the 5-point Likert scale was 4.22 ± 0.73 . When patients were grouped according to age, the overall satisfaction score increased significantly with age. In addition, the satisfaction scores of patients who had received radiotherapy were significantly higher than those of patients without radiotherapy. Regarding the characteristics of the system, the most satisfactory was the accuracy of the data transmission. In addition, patients were very satisfied with telephone counseling.
Ligibel et al., ⁴³ (2012) USA	To assess the ability of a telephone-based physical activity intervention to increase weekly physical activity and improve physical functioning and fitness in breast and colorectal cancer survivors.	2-36 months Posttreatment	Randomized controlled trial The intervention group participated in a 16-week telephone exercise intervention. The control group received routine care for 16 weeks and was then offered a telephone consultation with a trainer at the end of the control period. Assessment was performed at baseline and after completion of the 16-week study period.	N= 121 Breast and colorectal cancers	Phone call	Participants randomized to the exercise group, compared to the control group; increased physical activity and experienced significant increases in physical fitness and function.

Lyons et al., ⁵⁴ (2015) USA	To develop and test an intervention to optimize functional recovery in breast cancer survivors.	< 6 months Posttreatment	Pre and Post test Study 1: development of the data collection and treatment manual. Nine telephone sessions that occurred once a week for 6 weeks, with three monthly follow-up sessions. Evaluation: at baseline, 8 weeks later (after weekly sessions), and 26 weeks after baseline (after monthly follow-up sessions). Study 2: Review treatment, develop a measure of fidelity, and assess feasibility and efficacy. The intervention consisted of six telephone sessions that occurred once a week for 6 weeks, with three monthly follow-up sessions. Assessment at the time of enrollment and 6 weeks later.	Study 1: N= 15. Breast cancer Study 2: N= 16. Breast cancer	Phone call	Those who completed all study activities were found to be very satisfied with the intervention. An improvement in the general quality of life was observed, in active coping, planning, reframing and a decrease in self-blame. Ultimately, the intervention is feasible and should be studied to determine its effectiveness in promoting recovery and maximizing activity participation after cancer treatment.
Meneses et al., ⁵⁷ (2018) UK	To pilot test the breast cancer survival intervention for Latinas. A self-management intervention for survival that was delivered over the phone.	≤3 years Posttreatment	Randomized controlled trial Three weekly educational sessions delivered by phone and 6 support phone calls. Data collection was performed at the beginning of the study, at 3 and 6 months.	N=40 Breast cancer	Phone call	Overall physical and emotional well-being remained similar over time with poorer well-being scores compared to the general population. Pain levels improved over 6 months. Fatigue scores improved at 3 months. Depressive symptoms remained elevated but were not clinically significant.
Meneses et al., ⁶⁷ (2020) USA	To compare two strategies for implementing an evidence-based telephone support and education intervention for rural breast cancer survivors in which the education was delivered early or after the support component.	< 3 years Posttreatment	Randomized controlled trial with two arms 12-month duration with two arms: Early Education and Support and Late Education and Support. The arms differed in timing of the 6 support sessions and the 3 education sessions. The results were analyzed longitudinally using repeated measures models fitted with linear mixed methods.	N= 432. Breast cancer	Phone call E-mail	There were no differences in outcomes between those who received education and support early (at month 1) and those who received it late (at month 7).

Mihuta et al., 18 (2018) Australia	To assess the efficacy of a web-based cognitive rehabilitation intervention in adult cancer survivors and a sample of adults without cancer.	≥6 months Posttreatment	Randomized controlled trial with three arms Participants were assigned to a cancer intervention group, a noncancer intervention group, or a noncancer waiting list group. The intervention groups completed a 4-week online program, and all participants were assessed at baseline, post-intervention, and at 3-month follow-up.	N= 51 (survivors and non-survivors) Type of cancer not specified	Website	Significant improvements in self-reported measures of cognitive functioning were seen in both treatment groups, as well as improvements in objective measures assessing attention and executive functioning. No intervention effects were observed for distress, quality of life, or perception of illness. A high satisfaction of the participants was observed, both those who had cancer and those who did not. Ultimately, web-based cognitive rehabilitation intervention has the potential to improve subjective and objective cognitive functioning in both cancer survivors and cancer-free adults.
Paxton et al., ²⁸ (2014) USA	To determine the physical activity intervention preferences of African American breast cancer survivors and to determine whether these preferences differ according to medical and sociodemographic factors.	Posttreatment	Quantitative study Preferences about how to carry out the intervention were evaluated through questionnaires through the web. Descriptive statistics were used to characterize their interests in physical activity interventions and subgroup differences were assessed.	N= 291 Breast cancer	Website E-mail Phone call	The majority (90%) of participants reported that they could participate in physical activity, and many (67%) indicated that they were interested in receiving program materials. The participants expressed greater interest in email (50%), the web (48%) or conventional mail (45%) over the group (39%) and the telephone (10%). Women also expressed greater interest in participating in studies that promoted walking and resistance or strength training. Intervention preferences did not differ significantly (P>0.05) based on sociodemographic or medical factors.
Puszkiewiz et al., ²⁹ (2016) UK	To assess recruitment, study uptake, and participation in a publicly available mobile app physical activity intervention (GAINFitness) for cancer survivors.	Posttreatment	One arm pre-post test Engagement with the app was measured using self-reported frequency and duration of use. Qualitative semistructured telephone interviews were conducted after the 6-week study period and analyzed at the beginning and end of the intervention.	N=11 Breast, prostate and colorectal cancers	Mobile app	On average, participants used the app twice a week for 25 minutes per session. Four themes were identified from the qualitative interviews around the suitability of the app for cancer survivors and how the app could be adapted: (1) barriers to physical activity, (2) receiving physical activity advice from trusted sources, (3) adapt the application to one's own lifestyle and (4) receive social support from others. The

						pre-post comparison showed significant increases in strenuous physical activity, improvements in sleep quality, and reductions in light physical activity. There were no significant changes in moderate physical activity or other psychosocial outcomes.
Ridner et al., ³¹ (2020) USA	To assess the effects of a web-based intervention for patients with breast cancer-related lymphoedema on symptom burden, function, psychological well-being, costs, and arm volume.	Posttreatment	Randomized controlled trial Phase 1: Focus groups to solicit patient feedback on lymphedema self-care and ideas for website content and presentation formats. Phase 2: Randomized controlled trial to assess the effects of the website on lymphedema self-management and associated outcomes compared to those effects using a traditional educational brochure.	N= 160 Breast cancer	Website	A statistically significant difference (p = 0.011) was observed for intervention completion rates, web-based (58%) and Booklet (77%). Except for the number of biobehavioral (mood) symptoms, no statistically significant differences were observed between groups in symptom reduction between baseline and 1 or 12 months. No statistically significant differences were observed between groups for changes in other variables. The website was perceived to provide better information on self-care than the brochure.
Ritvo et al., ⁴⁸ (2017) Canada	To conduct an initial evaluation of the iMOVE intervention and report on the development of a large-scale pragmatic randomized controlled trial.	<2 years Posttreatment	Study protocol: Randomized controlled trial Both groups receive the 12-week physical activity program with weekly group sessions and an individualized, progressive, home exercise program. The intervention group will additionally receive (1) 10 telephone health coaching sessions, (2) a smartphone with mobile data, if needed, (3) health monitoring support software, and (4) a portable blood-counting device. steps linked to a smartphone program.	N= 107 Breast cancer	Website Activity bracelet Phone call	Not applicable
Short et al., ³² (2017)	To investigate the impact of different delivery times of computer-designed physical activity modules on	Posttreatment	Randomized controlled trial Participants were randomly assigned to receive one of the following intervention	N= 492 Breast cancer	Website Artificial intelligence	The monthly module group rated the highest acceptability score and showed higher levels of resistance training compared to the single

Australia	engagement and physical activity behavior change using a web-based intervention targeting breast cancer survivors.		programs for 12 weeks: a three-module intervention delivered monthly, a three-module intervention delivered weekly, or a single-module intervention.			module group. Accounting for missing data, these differences were no longer significant.
Sprague et al., ³³ (2019) USA	To compare patient satisfaction and recall of nutrition and exercise recommendations after inperson clinic visits with telemedicine appointments.	Posttreatment	Pilot research study, quantitative and quasi-experimental. Both patients who received their survival plan from a nurse in person and survivors who received it by telephone were recruited. Participants were sent a link to a survey.	N= 52 Not specified	Phone call	There were no statistically significant differences between mean patient satisfaction or recall of healthy weight, exercise, and nutrition recommendations between cancer survivors who received their survivorship care plan over the phone versus a clinic appointment with a nurse.
Sun et al., ⁶² (2018) USA	To describe the study design of a telehealth-based ostomy self-management training (OSMT) program for cancer survivors and their caregivers.	<6 weeks from the creation of an intestinal stoma.	Longitudinal randomized controlled trial Participants were randomized to OSMT or usual care. The curriculum is delivered via videoconference through four group sessions administered by trained ostomy certified nurses (WOCNs) and ostomy peers. An additional session is offered to caregivers to address their needs related to ostomy care.	N=38 Bowel cancer	Video conference	Not applicable
Syrjala et al., ¹² (2018) USA	To examine the effectiveness of INSPIRE, an internet-based survivorship program with information and resources, with or without phone calls for problem solving, for survivors after hematopoietic cell transplantation.	3-18 years post hematopoietic transplant	Randomized controlled trial They completed self-reported results at baseline and at 6 months. Those with poor baseline scores on one or more of the outcomes were randomized to INSPIRE, INSPIRE + problem-solving phone calls, or the INSPIRE delayed access control group.	N=755 Hematopoietic cancer	Website Phone call	No reduction in aggregate outcomes was found for any of the interventions. In analyzes of individual outcomes, participants randomized to INSPIRE + phone calls were more likely to improve in distress than controls; those randomized to INSPIRE were only marginally more likely to improve in distress. The online intervention demonstrated a marginal benefit for distress that improved with the addition of phone call-mediated problem-solving therapy.
Tagai et al., ⁵²	To assess PROGRESS, a web-based intervention	≤ 1 year Posttreatment.	Randomized controlled trial	N= 431	Website	At completion, the intervention group had improved coping with diversionary thinking

(2021) USA	designed to improve adaptive coping among prostate cancer survivors.		Mixed methods Participants were randomly assigned to receive educational brochures or PROGRESS + educational brochures. Surveys were completed at baseline, 1, 3, and 6 months. Intention-to-treat and how-to-treat analyzes were completed to assess change in outcomes from baseline to six months using mixed-effects linear regression models.	Prostate cancer		(i.e., healthy redirection of worrying thoughts about their cancer), but showed more difficulties with marital communication. However, the use of PROGRESS was low among participants in the intervention group (38.7%). PROGRESS users reported fewer practical concerns but had worse positive coping compared with non-PROGRESS users.
Underhill et al., ¹⁹ (2017) USA	To assess patient-reported enrollment, completion, and acceptability rates of an educational website on Hodgkin's disease survivorship care.	≥2 years Posttreatment	Mixed method evaluation They reviewed a website, completed an adapted version of the electronic acceptability scale (total score of 24 or more indicates acceptability), and responded to a structured interview by phone or email to discuss experiences with the website.	N=63 Immune system cancer	Website	82.5% of registrants viewed all content on the website. 48 participants completed the acceptability survey, resulting in a mean acceptability score of 26.5 (standard deviation, 3.5). Most of the enrollees (67%) completed the follow-up interview.
Van de Wiel et al., ⁴⁷ (2021) USA	To assess the effectiveness and costs of IPAS alone (online only) or IPAS combined with physical therapist telephone advice (combined care), compared with a control group.	3-36 months Post treatment	Multicentre randomized controlled trial Survivors were randomized into three groups; (1) online only: IPAS (2) combined: IPAS + additional telephone assistance from a physical therapist, or (3) control group. All outcomes were assessed at baseline, after the intervention (6 months), and at 12-month follow-up. Here we report post-intervention effects at 6 months.	N= 137 Breast & prostate cancers	Website Phone call	The IPAS in its current form was not shown to be effective in increasing PA levels from moderate to vigorous or for secondary outcomes, compared to a control group, either as a stand-alone intervention or as combined care.
Van den Berg et al., ⁵⁰ (2015) Netherlands	To assess whether usual care + BREATH is superior to usual care alone.	2-4 months Posttreatment	Multicenter, randomized, controlled and parallel group trial The intervention group has access to BREATH, which includes 16 fully automated weekly modules covering early survival issues. The evaluation was performed at baseline and at 4, 6 and 10 months of follow-up.	N=150 Breast cancer	Website	Access to BREATH reduced distress among breast cancer survivors, but this effect was not sustained at follow-up. Fear of cancer recurrence, fatigue, and general and cancer-related distress were reduced in the intervention group. The effect of BREATH on fear of cancer recurrence was maintained during follow-up. Access to BREATH did not

						influence empowerment or improvement in clinical distress in survivors with high distress. Low-stress breast cancer survivors showed greater clinical improvement and less deterioration with Usual Care + BREATH than those in the control group.
Van der Hout et al., ⁵³ (2020) Netherlands	To assess the efficacy, reach, and use of Oncokompas, a web-based eHealth application that assists cancer survivors in self-management by monitoring health-related quality of life, generic symptoms of cancer and tumor-specific information and getting personalized feedback with a personalized overview of supportive care options.	3 months- 5 years Posttreatment	Randomized controlled trial Participants were randomly assigned by an independent investigator to the intervention group (access to Oncokompas) or the control group (access to Oncokompas after 6 months) (1:1), using block randomisation, stratified by tumor type. Differences between groups were assessed over time from baseline to 6-month follow-up.	N= 625 Breast, colorectal, immune system, & head and neck cancer	Mobile app Artificial intelligence	Oncokompas did not improve cancer survivors' amount of self-care knowledge, skills, and confidence, mental adjustment to cancer, supportive care needs, self-efficacy, personal control, or perceived efficacy in doctor-patient interaction. However, Oncokompas did improve the secondary outcomes of health-related quality of life and tumor-specific symptom burden. Regarding patient activation, no increase in patient activation was observed but this may be because most of the participants were long-term survivors (>2 years after diagnosis), who may have already encountered the information and the support they need to build their skills and confidence to handle cancer-related concerns.
Van der Hout et al., ⁶⁸ (2021) Netherlands	To explore which subgroups of cancer survivors may particularly benefit from Oncokompas (web-based self-management application for cancer survivors).	3 months- 5 years Posttreatment	Randomized controlled trial Participants were randomly assigned to the intervention group (access to Oncokompas), or the control group (6-month waiting list).	N= 625 Breast, colorectal, immune system, & head and neck cancer	Mobile app	None of the factors investigated significantly moderated the effect of Oncokompas. Health literacy was found to moderate the effect of health-related quality of life, favoring survivors with more health literacy. However, the effect of the intervention on health-related quality of life was greater among cancer survivors with low to moderate self-efficacy, among those with high personal control, and those with high health literacy scores. Cancer survivors with higher baseline symptom scores had more significant results in terms of symptom reduction.

Van der Hout et al., ⁷⁰ (2021) Netherlands	To assess the cost-utility of Oncokompas (web-based self-management application for cancer survivors) compared to usual care among cancer survivors.	3 months- 5 years Posttreatment	Randomized controlled trial Survivors were randomly assigned to the intervention or control group. Direct (non) medical costs, indirect non-medical costs, and health-related quality of life were measured at 3- and 6-month follow-up, using the iMTA Medical Consumption and Productivity Costs and the EuroQol-5D questionnaires. Mean cumulative costs and quality-adjusted life years (QALYs) were compared between the two groups.	N= 625 Breast, colorectal, immune system, & head and neck cancer	Mobile app	Base case analysis showed that incremental costs from a societal perspective were: 163% (95% CI, -665 to 326), and incremental QALYs were 0.0017 (95% CI, -0.0121 to 0 .0155) in the intervention group compared to those in the control group. The probability that, compared to usual care, Oncokompas would be more effective was 60%, less expensive 73%, and more effective and less expensive 47%. Sensitivity analyzes showed that the incremental costs vary between €40 and €69, and the incremental
Van der Hout et al., ⁶³ (2021) Netherlands	To explore reasons for not participating in the randomized controlled trial and non-users' reasons for not using Oncokompas, and users' use and evaluation of Oncokompas.	3 months- 5 years Posttreatment	Randomized controlled trial Reasons for not participating were assessed with a study-specific questionnaire given to the 243 survivors who refused to participate. Usage among participants in the intervention group was investigated using system data and a study-specific questionnaire at the 1-week (T1) follow-up assessment.	N= 625 Breast, colorectal, immune system, & head and neck cancer	Mobile app	QALYs vary between -0.0023 and -0.0057. The main reasons for not participating were not interested in participating in scientific research (40%); not interested in scientific research and Oncokompas (28%); wanting to put the illness period behind them (29%); not having symptoms (23%); or not having internet skills (18%). Among the 72 non-users, the main reasons for not using Oncokompas were: the absence of symptoms (32%) or lack of time (26%). Among the 248 survivors who activated their account, satisfaction and ease of use were rated 7 (0-10 scale).
Wagner et al., ¹³ (2021) USA	To evaluate a targeted eHealth intervention called "FoRtitude", to reduce Fear of Recurrence (FoR) through remote cognitive-behavioral skills training.	1-10 years Posttreatment	Randomized controlled trial Participants were randomized to 3 cognitive behavioral skills (relaxation, cognitive restructuring, worry practice) versus an attention control condition (health management content) and telecoaching (motivational interviewing) versus no condition. telecoaching. The content of the website was published for 4 weeks and included didactic lessons, interactive tools and a	N= 196 Breast cancer	Website Phone call	Fear of cancer recurrence scores decreased statistically significantly from baseline to post-intervention. The magnitude of reduction in fear of cancer recurrence scores was comparable in the cognitive behavioral therapy and usual care control group and was predicted by higher self-efficacy.

			text messaging function. Breast cancer survivors completed the Fear of Cancer Recurrence Inventory at baseline and at 4 and 8 weeks.			Telecoaching was associated with lower attrition and higher website use. That is, it improved adhesion and retention.
Willems et al., ⁵⁹ (2015) Netherlands	To describe the systematic development and study design for the evaluation of Cancer Aftercare Guide, a personalized web-based intervention that provides lifestyle and psychosocial support to cancer survivors.	4- 56 weeks Post treatment	mixed study A needs assessment was conducted using a literature review, focus group interviews, and a survey study to learn more about the health problems of cancer survivors. At the start of the intervention, participants were required to complete a screening questionnaire. Based on their answers, participants receive personalized advice on problem areas that interest them.	N= 462 Breast cancer and others (not specified)	Website	Not applicable
Willems et al., ⁶⁰ (2017) Netherlands	To assess the short-term effectiveness of the web-based computer-adapted intervention Kanker Nazorg Wijzer- KMW (Postcancer Care Guideline). This intervention aims to support cancer survivors with the management of psychosocial and lifestyle-related problems. In this study, the impact on quality of life, anxiety, depression, and fatigue was assessed.	4- 56 weeks Post treatment	Randomized controlled trial. An intervention group and a waiting list control group were included. Outcome measures included quality of life (European Organization for Research and Treatment of Cancer Quality of Life Questionnaire-C30), anxiety and depression (Hospital Anxiety and Depression Scale), and fatigue (Hospital Anxiety and Depression Scale). individual strength).	N= 462 Breast cancer and others (not specified)	Website	188 participants from the intervention group and 221 from the control group completed the 6-month measurement (dropout = 11.5%). The intervention was effective in reducing depression and fatigue. In addition, effects were found for emotional and social functioning, although this evidence was less strong. Since the Post-Cancer Care Guide is an effective, low-intensity, and easily accessible intervention, it could serve as a first step in stepped care for needs assessment and initial support for psychosocial issues that are present after cancer care. of cancer treatment.
Willems et al., ⁶⁹ (2017) Netherlands	To investigate whether the effects at 6 months of increased emotional and social functioning and reduced depression and fatigue are maintained at 12 months from the start of the intervention. In addition, it explores whether patient	4- 56 weeks Posttreatment	Randomized controlled trial The intervention group had access to the KNW for 6 months directly after the start of the intervention. Access to the intervention was postponed for the control group on the waiting list until after the measurement, at 12 months.	N= 462 Breast cancer and others (not specified)	Website	At 12 months from baseline, the intervention group no longer differed from the control group in emotional and social functioning, depression, and fatigue. Moderator analyzes indicated that, at 6 months, the intervention was effective in improving social functioning for men, reducing fatigue for participants, and reducing depression for participants who received chemotherapy. At 12 months,

	characteristics moderate the effectiveness of the intervention at 6 and 12 months.		Both groups had to complete a questionnaire at the start of the study and after 3, 6 and 12 months from the start.			participants with a medium level of education showed higher social functioning, while participants with a low level of education showed lower social functioning than participants with a similar level of education in the control group.
Yanez et al., 55 (2018) USA	To describe the methodology of a randomized controlled trial investigating the feasibility and preliminary efficacy of a phone application aimed at improving health-related quality of life and cancerspecific distress among Hispanic breast cancer survivors.	3-24 months Posttreatment	Study protocol: Randomized controlled trial Participants will be randomly assigned to an intervention group using My Guide (psychoeducation and self-management program), or a control group using the health education control application, My Health (health education), for six weeks. All will receive weekly remote training to improve compliance with control and intervention conditions.	N= 80 Breast cancer	Mobile App	Not applicable
Yanez et al., ⁵⁶ (2020) USA	To establish the feasibility and preliminary efficacy of My Guide and My health, mobile phone applications for Latina breast cancer survivors.	2-24 months Posttreatment	Randomized controlled trial Participants were randomly assigned to use My Guide on My health for 6 weeks. Assessments were performed at baseline (T1) six weeks after the intervention (T2) and two weeks after T2 (T3).	N= 80 Breast cancer	Mobile app	Recruitment was fair (79%), retention was excellent (>90%), and more than 90% of participants were satisfied with their application. Participants in both conditions used the apps for more than 1 hour per week. Symptom burden decreased from T1 to T2 in both conditions, but this decrease was not maintained at T3.
Yun et al., ⁶¹ (2012) South Korea	To determine if a personalized education program via the Internet is effective for disease-free individuals, cancer survivors with cancer-related fatigue.	<24 months Posttreatment	Randomized controlled trial Participants were randomly assigned to either an intervention group (internet-based program) or a usual care control group. The duration of the intervention was 12 weeks. The results were evaluated at the beginning and at the end of the intervention.	N= 273 Breast, stomach, colon, uterine, lung & thyroid cancers	Website	Compared to the control group, the intervention group had an improvement in fatigue and experienced a significantly greater decrease in anxiety, as well as global quality of life.

 Table 2. Types of Cancer and Use of Telehealth in the Included Articles

Type of Cancer	Percentage of Included Studies (n=59)				
Survivors of a specific type of cancer	59 %				
Survivors with multiple cancers	34%				
Does not specify the type of cancer	7%				
Types of identified cancer	98%				
Breast cancer	47%				
Colorectal cancer	10%				
Gynecological cancer	8%				
Prostate cancer	8%				
Head and neck cancer	6%				
Immune cancer	5%				
Thyroid cancer	3%				
Intestinal cancer	2%				
Lung cancer	2%				
Oral cancer	1%				
Stomach cancer	1%				
Sarcoma	1%				
Skin cancer	1%				
Hematopoietic cancer	1%				
Urinary tract cancer	1%				
Esophageal cancer	1%				

 Table 3. Type of Telehealth Used in the Included Studies

Type of Telehealth	Telephone Call	Video Conference	Mobile App	Web Site	Email 5%	Activity Bracelet	SMS 1%
% Of Use	26%	9%	21%	34%	370	4%	170
Authors (Year)							
Abrahams et al. 14 (2015)		X		X			
Badr et al. ⁶⁶ (2016)				X			
Befort et al. ¹⁵ (2014)	X						
Bender et al. ³⁰ (2016)		X			X		
Blair et al. ³⁴ (2021)			X				
Børøsund et al. ⁵¹ (2020)	X		X				
Buscemi et al. ⁶⁴ (2019)	X		X				
Cox et al. ³⁵ (2015)	X						
Duffecy et al. ³⁶ (2013)				X			
Duman- Lubberding et al. ⁶⁵ (2016)			X				
Freeman et al. 16 (2015)	X	X					
Galiano- Castillo et al. ³⁷ (2013)				X			
Galiano- Castillo et al. ³⁸ (2014)				X			
Galiano- Castillo et al. ³⁹ (2016)				X			

Galiano- Castillo et al. ⁴⁰ (2017)				X			
Garrett et al. ²⁰ (2013)	X						
Gorzelitz et al. 17 (2022)				X			
Graetz et al. ²¹ (2018)			X				
Grant et al. ²² (2022)		X					
Hardcastle et al. ⁴⁴ (2019)	X	X				X	
Harder et al. ²³ (2017)				X			
Harvey et al. ²⁴ (2017)	X				X	X	
Hwang et al. ⁵ (2020)	X		X	X			
Jhaveri et al. ²⁵ (2020)		X					
Kanera et al. ⁴⁵ (2016)				X			
Kanera et al. ⁴⁹ (2017)				X			
Kapoor et al. ²⁶ (2018)			X				
Larson et al. ⁶ (2020)	X	X		X			
Lawler et al. ⁵⁸ (2017)	X						
Lee et al. ⁴¹ (2014)				X			
Lee et al. ²⁷ (2018)			X				X
Ligibel et al. ⁴³ (2012)	X						
Lyons et al. ⁵⁴ (2015)	X						
Meneses et al. ⁶⁷ (2020)	X				X		
Meneses et al. ⁵⁷ (2018)	X						

Mihuta et al. ¹⁸ (2018)				X			
Paxton et al. ²⁸ (2014)	X			X	X		
Puszkiewicz et al. ²⁹ (2016)			X				
Ridner et al. ³¹ (2020)				X			
Ritvo et al. ⁴⁸ (2017)	X			X		X	
Short et al. ³² (2017)				X			
Sprague et al. ³³ (2019)	X						
Sun et al. ⁶² (2018)		X					
Syrjala et al. ¹² (2018)	X			X			
Tagai et al. ⁵² (2021)				X			
Underhill et al. 19 (2017)				X			
Van de Wiel et al. ⁴⁷ (2021)	X			X			
Van den Berg et al. ⁵⁰ (2015)				X			
Van der Hout et al. ⁵³ (2020)			X				
Van der Hout et al. ⁶⁸ (a) (2021)			X				
Van der Hout et al. ⁷⁰ (b) (2021)			X				
Van der Hout et al. ⁶³ (c) (2021)			X				
Wagner et al. ¹³ (2021)	X			X			
Willems et al. ⁵⁹ (2015)				X			
Willems et al. ⁶⁰ (a) (2017)				X			

Willems et al. ⁶⁹ (b) (2017)			X		
Yáñez et al. ⁵⁵ (2018)		X			
Yáñez et al. ⁵⁶ (2020)		X			
Yun et al. ⁶¹ (2012)			X		