Supplementary appendix

This appendix formed part of the original submission and has been peer reviewed. We post it as supplied by the authors.

Supplement to: Shaffer KM, Turner KL, Siwik C, et al. Digital health and telehealth in cancer care: a scoping review of reviews. *Lancet Digit Health* 2023; **5:** e316–27.

Supplementary Table 1. Search Strategies

Database	Query	Limiters/Expanders	Last Run Via
PubMed/ MEDLINE	(("Neoplasms"[Mesh] OR cancer[tiab] OR neoplasm[tiab] OR neoplasms[tiab] OR "secondary cancer" [tiab] OR "secondary malignancy"[tiab] OR "second primary"[tiab] OR "second cancer" [tiab] OR "second* malignanc*"[tiab]) **AND** ((Telemedicine[mesh] OR telemedicine[tiab] OR "virtual visit"[tw] OR "virtual appointment"[tw] OR "video visit"[tw] OR "online visit"[tw] OR "online appointment"[tw] OR "e-consult"[tw] OR "e-consultation"[tw] OR remote consultation[mesh] OR "remote consult"[tiab] OR "remote consultation"[tiab] OR teleconsultation[mesh] OR "teleconsultation"[tiab] OR "teleconsult"[tiab] OR "videoconference"[tiab] OR "wearables"[tiab] OR "mobile sensing"[tiab] OR "mobile health"[tiab] OR "smartwatch*"[tiab] OR "eHealth"[tiab] OR "mHealth"[tiab] OR "social media"[tiab] OR "text messag*"[tiab]) *OR ((telephone*[tiab] OR online[tiab] OR digital[tiab] OR mobile[tiab] OR internet[tiab] OR technolog*[tw] OR "technology-based"[tiab] OR "text messag*"[tiab]) AND (intervention[tw] OR interventions[tw])))) **AND** (((((systematic review[ti] OR systematic literature review[ti] OR systematic scoping review[ti] OR systematic narrative review[ti] OR systematic qualitative review[ti] OR systematic evidence review[ti] OR systematic quantitative review[ti] OR systematic meta-review[ti] OR systematic critical review[ti] OR systematic mixed studies review[ti] OR systematic mapping review[ti] OR systematic Cochrane review[ti] OR systematic search and review[ti] OR systematic integrative review[ti]) NOT comment[pt] NOT (protocol[ti] OR protocols[ti])) NOT MEDLINE [subset]) OR (Cochrane Database Syst Rev[ta] AND review[pt]) OR systematic review[pt])	Filters – Language: English	PubMed, including PubMedCentral and MEDLINE Display mode: Most recent
CINAHL	(MH "Meta Analysis") OR TI meta analys* OR AB meta analys* OR TI Metaanaly* OR AB metaanalys* OR (MH "Literature Review+") OR TI systematic review* OR AB systematic review* OR TI systematic overview*	Limiters – Language: English;	Interface - EBSCOhost

	OR AB systematic overview* NOT (PT commentary OR PT letter OR PT editorial OR MH animals+) **AND** ((Telemedicine OR virtual visit OR virtual appointment OR video visit* OR online visit OR online appointment OR e-consult OR e-consultation OR remote consultation OR remote consult OR remote consultation OR teleconsultation OR teleconsult OR videoconference OR wearables OR mobile sensing OR smartwatch* OR eHealth OR mHealth OR social media OR text messag* OR MH Telemed OR MH Telehealth OR MH Videoconference OR MH social media) *OR ((telephone* OR online OR digital OR mobile OR internet OR technolog* OR "technology-based" OR "text messag*") AND (intervention* OR interventions)))* **AND** (Neoplasm* OR cancer* OR secondary cancer OR secondary malignancy OR second primary OR second cancer OR second* malignanc* OR MH"Neoplasms")	Academic journals only; Peer Review	CINAHL w/ Full Text
PsycINFO	"Meta Analysis" OR "meta analys*" OR Metaanaly* OR "Literature Review*" OR "systematic review*" OR "systematic overview*" NOT (commentary OR letter OR editorial OR animals) **AND** (Telemedicine OR virtual visit OR virtual appointment OR video visit* OR online visit OR online appointment OR e-consult OR e-consultation OR remote consultation OR remote consult OR remote consultation OR teleconsultation OR teleconsult OR videoconference OR wearables OR mobile sensing OR smartwatch* OR eHealth OR mHealth OR social media OR text messag* OR "telemed" OR telehealth OR videoconference OR "social media") **AND** (Neoplasm* OR cancer* OR secondary cancer OR secondary malignancy OR second primary OR second cancer OR second* malignanc*)	Limiters – Language: English; Academic journals only; Peer Review	Interface - EBSCOhost APA Psycinfo
Cochrane Reviews	(Neoplasm* OR cancer* OR secondary cancer OR secondary malignancy OR second primary OR second cancer OR second* malignanc*) **AND** (Telemedicine OR virtual visit OR virtual appointment OR video visit* OR online visit OR online appointment OR e-consult OR e-consultation OR remote consultation OR remote consult OR remote consultation OR teleconsultation OR teleconsult OR videoconference OR wearables OR mobile sensing OR smartwatch* OR eHealth OR mHealth OR social media OR text messag*)	Filters – English; Pub type: only reviews; MeSH were not used in Cochrane because citations would have been identified through PubMed search	Cochrane Library

Web of Science	(TS=(systematic review OR systematic literature review OR systematic scoping review OR systematic narrative review OR systematic qualitative review OR systematic evidence review OR systematic quantitative review OR systematic meta-review OR systematic critical review OR systematic mixed studies review OR systematic mapping review OR systematic Cochrane review OR systematic search and review OR systematic integrative review)) **AND** (TS=(Neoplasm* OR cancer* OR secondary cancer OR secondary malignancy OR second primary OR second cancer OR second* malignanc*) **AND** ((Telemedicine OR virtual visit OR virtual appointment OR video visit* OR online visit OR online appointment OR e-consult OR e-consultation OR remote consultation OR remote consult OR remote consultation OR teleconsultation OR teleconsult OR videoconference OR wearables OR mobile sensing OR smartwatch* OR eHealth OR mHealth OR social media OR text messag*) *OR ((telephone* OR online OR digital OR mobile OR internet OR technolog* OR "technology-based" OR "text messag*") AND (intervention OR interventions))))*	Limiters – Language: English; Publication Types: Review Articles and Early Access	Clarivate Web of Sciences Core Collection

*Special thanks to the National Institutes of Health and the Canadian Agency for Drugs and Technologies in Health (CADTH) for their publicly available search filters and/or hedges. We adapted terms to find only systematic reviews.

Note: Italicized text represents phrases added from peer review process (search executed September 2022). PsychINFO and Cochrane Reviews searches were not updated, as adding the new phrase did not identify any novel records from the prior search.

Supplementary Table 2. Data Items

Category	Data Item	Description	Coding
Review information	Inclusive years	Years of publication considered eligible for inclusion in a review	Earliest year coded 'earliest available' if no earliest eligible year specified. Latest year coded as year search was conducted or year of review publication if no date of search specified.
	Number of included articles	Number of records analyzed in a review	n/a
	Search constructs	Terms indicating broad constructs of the review search strategy	Coded according to terms listed by authors where specified; where only full search strategies were listed, a representative term from the full list was utilized
Review purpose and conclusion	Purpose	Authors' objective in conducting the review	Paraphrased from review text
	Conclusion	Authors' deductions from the review (paraphrased)	Paraphrased from review text
Population	Individual targeted	The population targeted by the telehealth intervention to improve their own health, education, or care provision	Patient = Individual at risk for cancer (as in for preventive interventions), receiving cancer treatment, or who completed treatment (i.e., survivor) Family = Family member of a patient, inclusive of partners, close friends, family caregivers Healthcare personnel = Professional healthcare providers
	Cancer type	Whether the review targeted or included only specific types of cancers; More than one type may be selected where certain cancer types were specified in inclusion criteria	Blood = Inclusive of leukemia, lymphomas, myelomas Breast Colorectal = Inclusive of colon and rectal Lung Prostate Skin = Inclusive of basal, squamous, and melanoma Gynecologic = Inclusive of uterine, ovarian, vulvar, vaginal Multiple or not specified = No specific cancer type was specified as part of inclusion criteria

	Cancer care continuum	Phase of the cancer continuum[165] where interventions are targeted	Prevention = Interventions intended to reduce risk for cancer occurrence or relapse Screening/diagnosis = Interventions intended to detect or diagnose cancer, or address immediate needs at the time of diagnosis (including relapse) Treatment/symptom monitoring = Interventions intended to support active cancer treatment and/or monitor symptoms Survivorship = Interventions intended to support survivor during remission period (inclusive of transition off-treatment) End-of-life/Bereavement = Interventions intended to support end-of-life decision making or comfort, or coping with death of loved one from cancer Multiple or not specified = Interventions span across phases, or unclear intended target of interventions
Intervention	Intervention or care provided	Characterization of the type of intervention or care provided by the telehealth intervention	Health behavior change = Intervention intended to modify an individuals' behaviors related to cancer prevention and control (e.g., tobacco cessation, weight loss, complete routine screenings) Psychosocial support and distress management = Intervention intended to address psychosocial aspects of cancer (e.g., support groups, coping skills training to reduce cancer-related distress) Disease detection or management = Intervention intended to screen, detect, or monitor cancer and cancer-related side effects (e.g., symptom monitoring, remote screening) Medical decision making = Interventions intended to support individuals' choices about their cancer-related preventive and treatment care plans (e.g., genetic counseling, patient navigation, decision aids) Multiple or not specified = Where no single kind of intervention or care was required for inclusion, or unclear intended type of interventions Other (with specification) = Where there was a single kind of intervention or care specified for inclusion that did not fit meaningfully in the categories above

	Technology modality	The primary telehealth delivery methods of the interventions included in the review	Synchronous telehealth = Direct, two-way connection between a patient and interventionist via telephone or videoconference call Text messaging/SMS = Inclusive of automated, 1-way, and bi-directional messaging delivered via cellular text or short messaging service (SMS) Email/secure messaging = Inclusive of automated, 1-way, and bi-directional messaging by way of email or native platforms eHealth = Delivery by web browser, typically intended for interaction via a computer or tablet Mobile application = Apps or programs intended for use specifically via a smartphone Other (with specification) = Where an intervention delivery modality used by one or more studies in the review did not fit meaningfully in the categories above
	Human involvement	Whether there were specific individuals involved in the delivery of the provided care across included interventions	Healthcare professional = Inclusive of medical, psychological, and related practitioners and providers None – fully-automated interventions = Review clearly specifies all included interventions are delivered without involvement of professionals, staff, or other individuals Multiple or not specified = Human involvement was not specified as part of study eligibility or data were not clearly extracted to make determination
Study design	Meta-analysis	Whether the review included a meta-analysis	Yes = All included studies meta-analyzed Yes (article subset) = A subset of articles meta-analyzed (e.g., just included RCTs) No
	Comparator required	Whether there was a comparison condition in addition to the telemedicine intervention required as part of inclusion criteria for the review	Yes – In-person = Eligibility required trials to have an in-person/face-to-face treatment comparator arm Yes – Usual care = Eligibility required trials to have a treatment-as-usual/standard care comparator arm Yes – Other telehealth modality = Eligibility required trials to compare two or more telehealth modalities

			Yes – Any = Eligibility required trials to have any kind of comparator arm No = No eligibility criterion specified regarding comparator arms, or non-controlled trials eligible for inclusion
	Meta-analytic outcome	Authors' conclusions based on the meta-analysis	Paraphrased from review text where Meta-analysis = 'Yes' or 'Yes (article subset)'
	Review type	Indicated description of review	Coded according to term listed in-text, meta-analyses coded as systematic review
	Methodological quality / bias assessment	Whether the review reported any assessment of included studies' methodological quality or risk of bias	Yes No
Implemen-tation outcomes	Outcomes extracted	Whether reviews reported implementation outcomes, coded according to the terminology and taxonomy established by Proctor and colleagues[11]	Acceptability = Measure of perceived intervention agreeableness, inclusive of intervention satisfaction Adoption = Measure of intention or action to try an intervention, inclusive of intervention uptake Appropriateness = Measure of perceived fit or compatibility of an intervention with user's life, practice setting, and/or targeted issue Feasibility = Measure of how successfully an intervention can be carried out, inclusive of participation rates, attrition, and barriers Fidelity = Measure of degree of how intervention was carried out according to plan, inclusive of interventionist treatment adherence, dose or amount of intervention used or completed by participant Cost = Inclusive of intervention cost or cost-effectiveness calculations

Supplementary Table 3. Review Data

Review information	Review purpose and conclusion	Population	Intervention	Study design	Implement. outcomes
Acuna (2020) Inc: 2013 - 2018 N: 11 Search: Cancer + education + video	Purpose: Describe the use of online videos to improve cancer knowledge and their effects on information preference, behavior change, and knowledge Conclusion: Online videos generally increased cancer knowledge and influenced healthy behavior change where assessed	Ind: Patients Type: Mult / NS Cont: Prevention, Screening / diagnosis	Care: Mult / NS HI: Mult / NS Tech: eHealth	MA: No Comp: No Type: Systematic QA: No	No
Agboola (2015) Inc: earliest available - 2015 N: 20 Search: Cancer + telehealth	Purpose: Evaluate the effect of supportive telehealth interventions on pain, depression, and quality of life in cancer patients Conclusion: Heterogeneous designs and assessments make pooling effects difficult; findings were generally positive for cancer pain, but not depression or quality of life	Ind: Patients Type: Mult / NS Cont: Treatment / symptom management, Survivorship	Care: Psychosocial support / distress management HI: Mult / NS Tech: Synchronous telehealth, eHealth	MA: No Comp: Yes: Any Type: Systematic QA: Yes	No
Ahmad (2020) Inc: earliest available - 2018 N: 13 Search: Cancer + anxiety + pain + virtual reality	Purpose: Evaluate studies of and evidence for virtual reality technology for pain and anxiety management among patients with cancer Conclusion: Virtual reality interventions may be beneficial for managing pain and anxiety among patients with cancer	Ind: Patients Type: Mult / NS Cont: Treatment / symptom management	Care: Psychosocial support / distress management HI: Mult / NS Tech: Other (Virtual reality)	MA: No Comp: No Type: Systematic QA: Yes	No
Ansari (2022) Inc: 2000 - 2022 N: 39 Search: Cancer + Palliative care + Technology	Purpose: Identify studies of technology-based communication strategies to improve health among individuals with advanced cancer Conclusion: The majority of technology-based communication strategies were focused on information exchange between patients and their providers, and more research is needed related to fostering relationships and decision-making	Ind: Patients Type: Mult / NS Cont: Treatment / symptom management, End-of-life	Care: Mult / NS HI: Mult / NS Tech: Synchronous telehealth, Email / secure messaging, eHealth, Mobile application, Other (Interactive Voice Response)	MA: No Comp: No Type: Integrative QA: Yes	No

Ayyoubzadeh (2020) Inc: 1999 - 2019 N: 15 Search: Colorectal cancer + telehealth	Purpose: Describe the use of eHealth interventions for colorectal cancer survivors Conclusion: eHealth may provide useful support to colorectal cancer survivors on domains like quality of life, psychological and physical functioning, and quality of life	Ind: Patients Type: Colorectal Cont: Survivorship	Care: Mult / NS HI: Mult / NS Tech: Synchronous telehealth, eHealth, Mobile application, Other (wearable devices)	MA: No Comp: No Type: Systematic QA: No	Yes (acceptability, feasibility)
Badr (2015) Inc: earliest available - 2013 N: 8 Search: Cancer + psychosocial intervention + caregivers + interactive health communication technologies	Purpose: Describe the use of interactive health communication technologies in dyadic interventions in cancer Conclusion: Limited research has been conducted in this area, with available studies suggesting interactive health communication technologies are feasible and acceptable to patients and caregivers	Ind: Patients, Family Type: Mult / NS Cont: Mult / NS	Care: Mult / NS HI: Mult / NS Tech: Synchronous telehealth, eHealth	MA: No Comp: No Type: Systematic QA: No	No
Bártolo (2019) Inc: 2007 - 2017 N: 8 Search: Cancer + psychoeducation + distress / quality of life + telehealth	Purpose: Evaluate the effect of psycho-educational telehealth interventions on emotional distress and quality of life in adult cancer patients Conclusion: Evidence was limited, although available data suggests a trend towards reduced distress and improved quality of life for remote interventions with educational and psychological components	Ind: Patients Type: Mult / NS Cont: Treatment / symptom management, Survivorship	Care: Psychosocial support / distress management HI: Mult / NS Tech: Synchronous telehealth, Email / secure messaging, eHealth	MA: No Comp: No Type: Systematic QA: Yes	No
Bender (2013) Inc: 1990 - 2012 N: 0 Search: Cancer + mHealth	Purpose: Describe studies of mobile applications related to cancer Conclusion: There were no studies found that met inclusion criteria	Ind: Patients, Family Type: Mult / NS Cont: Mult / NS	Care: Mult / NS HI: Mult / NS Tech: Mobile application	MA: No Comp: No Type: Systematic QA: No	No

Bhochhibhoya (2021) Inc: 2009 - 2019 N: 12 Search: Cervical cancer + screening + telehealth	Purpose: Evaluate efficacy of interventions using mHealth strategies to increase cervical cancer screening Conclusion: Text message and phone call reminders are an acceptable and feasible way to increase cervical cancer screening uptake	Ind: Patients Type: Gynecologic Cont: Screening / diagnosis	Care: Health behavior change HI: Mult / NS Tech: Synchronous telehealth, Text Messaging / SMS	MA: No Comp: No Type: Scoping QA: Yes	No
Blackwood (2021) Inc: earliest available - 2019 N: 5 Search: Cancer + physical activity + telehealth	Purpose: Describe types of technologies used and outcomes of telehealth-delivered physical activity interventions for cancer survivors Conclusion: Limited evidence is available to compare outcomes between telehealth-delivered interventions and traditional home exercise programs among cancer survivors	Ind: Patients Type: Mult / NS Cont: Survivorship	Care: Health behavior change HI: Mult / NS Tech: Synchronous telehealth, Text messaging / SMS, Mobile application, Other (wearable devices)	MA: No Comp: No Type: Systematic QA: Yes	No
Bouma (2015) Inc: earliest available - 2014 N: 16 Search: Cancer + psycho-education / support + telehealth	Purpose: Describe the effects of Internet-based support programs on psychosocial and physical symptoms from cancer diagnosis and treatment Conclusion: Internet-based support programs are effective in improving cancer patients' psychosocial and physical symptoms	Ind: Patients Type: Mult / NS Cont: Mult / NS	Care: Mult / NS HI: Mult / NS Tech: Synchronous telehealth, Email / secure messaging, eHealth	MA: No Comp: No Type: Not specified QA: Yes	No
Bracke (2021) Inc: earliest available - 2020 N: 3 Search: Genetic counseling + telehealth	Purpose: Determine whether telephone genetic counseling for BRCA1 and BRCA2 genetic counseling is non-inferior to in-person genetic counseling on cancer-specific distress and knowledge Conclusion: Telephone genetic counseling was non-inferior to in-person genetic counseling on cancer specific distress and genetic knowledge, although further studies are warranted to corroborate results	Ind: Patients Type: Breast, Gynecologic Cont: Prevention	Care: Medical decision making HI: Healthcare professional Tech: Synchronous telehealth	MA: Yes Comp: Yes: In-person Type: Systematic QA: Yes MA Out: Telephone interventions non-inferior to in-person for both evaluated outcomes of cancer-specific distress and genetic knowledge	No

Bruce (2018) Inc: 2000 - 2015 N: 16 Search: Skin lesions + Teledermoscopy	Purpose: Describe the use and accuracy of teledermoscopy in identifying skin lesions among adults Conclusion: A higher level of evidence is needed to support the application of teledermoscopy for accurate diagnostic measurement of pre-cancerous and cancerous skin lesions	Ind: Patients Type: Skin / Melanoma Cont: Screening / diagnosis	Care: Disease detection or management HI: Mult / NS Tech: Synchronous telehealth, Mobile application, Other (Store-and-forward image transfer)	MA: No Comp: No Type: Systematic QA: No	Yes (feasibility)
Bu (2022) Inc: earliest available - 2021 N: 12 Search: Breast cancer + virtual reality	Purpose: Evaluate the effectiveness of virtual reality interventions on health-related outcomes of breast cancer survivors Conclusion: There were weak but consistently positive impacts of virtual reality interventions on breast cancer survivors' rehabilitation management	Ind: Patients Type: Breast Cont: Mult / NS	Care: Mult / NS HI: Mult / NS Tech: Other (Virtual reality)	MA: Yes (article subset) Comp: No* (meta-analysis only of included trials with any control) Type: Systematic QA: Yes MA Out: Virtual reality interventions showed positive impacts on shoulder range-of-motion outcomes (flexion, extension, abduction, adduction, internal rotation, and external rotation), anxiety, depression, pain, and cognitive function, but no differential impact on hand grip strength.	No
Buneviciene (2021) Inc: earliest available - 2019 N: 25 Search: Cancer + quality of life + mHealth	Purpose: Evaluate the impact of mHealth interventions on health-related quality of life of cancer patients Conclusion: mHealth interventions showed a positive impact on cancer patients' health-related quality of life	Ind: Patients Type: Mult / NS Cont: Mult / NS	Care: Mult / NS HI: Mult / NS Tech: eHealth, Mobile application, Other (wearable devices)	MA: Yes (article subset) Comp: Yes: Any Type: Systematic QA: Yes MA Out: mHealth interventions produced greater improvements in health-related quality of life relative to control	No

Cai (2021) Inc: 2010 - 2020 N: 8 Search: Breast cancer + intervention + mobile application	Purpose: Describe studies of the development of mHealth apps for patients with breast cancer Conclusion: Collaboration with patients and providers, as well as patient characteristics, needs, and patient-reported outcomes, are vital components for developing mHealth apps for breast cancer patients	Ind: Patients Type: Breast Cont: Mult / NS	Care: Mult / NS HI: Mult / NS Tech: Mobile application	MA: No Comp: No Type: Scoping QA: No*	No
Cazeau (2021) Inc: 2013 - 2020 N: 11 Search: Cancer + mHealth + medication adherence	Purpose: Evaluate efficacy of mobile health interventions for medication adherence in cancer Conclusion: Mobile health interventions for medication adherence in cancer tend to be acceptable to patients and may improve outcomes among those at highest risk for suboptimal adherence	Ind: Patients Type: Mult / NS Cont: Treatment / symptom management	Care: Health behavior change HI: Mult / NS Tech: Text messaging / SMS, Mobile application, Other (Automated phone calls)	MA: No Comp: No Type: Not specified QA: No*	Yes (acceptability, feasibility, fidelity)
Chandeying (2021) Inc: earliest available - 2021 N: 13 Search: Cancer + adolescent / young adult + online interventions	Purpose: Evaluate the effectiveness of online interventions on the mental health of pediatric, adolescent, and young adult cancer survivors Conclusion: Online interventions improved sleep and well-being among pediatric, adolescent, and young adult survivors, but not for reducing depression, anxiety, or pain	Ind: Patients Type: Mult / NS Cont: Mult / NS	Care: Health behavior change, Psychosocial support / distress management HI: Mult / NS Tech: Synchronous telehealth, Text messaging / SMS, Email / secure messaging, eHealth, Mobile application, Other (wearable devices, social media)	MA: Yes Comp: Yes: Any Type: Systematic QA: Yes MA Out: Online interventions showed a positive impact on sleep and psychological well-being, but not on depression, anxiety, or pain	No

Chen (2018) Inc: earliest available - 2016 N: 20 Search: Breast cancer + RCT + telehealth	Purpose: Evaluate the effect of telehealth interventions on quality of life and psychological outcomes in breast cancer Conclusion: Telehealth had superior outcomes to usual care on quality of life, self-efficacy, depression, distress, and stress, but not anxiety	Ind: Patients Type: Breast Cont: Mult / NS	Care: Mult / NS HI: Mult / NS Tech: Synchronous telehealth, Email / secure messaging, eHealth	MA: Yes Comp: Yes: Usual Care Type: Systematic QA: Yes MA Out: Telehealth intervention was associated with reduced depression (limitation by sensitivity analysis), distress, and perceived stress, and increased self-efficacy; but no effect for anxiety	No
Cheng (2022) Inc: earliest available - 2020 N: 16 Search: Cancer + adolescent / young adult + qualitative methods + digital health	Purpose: Identify, appraise, and synthesize qualitative data about pediatric cancer patients' experiences with digital health interventions Conclusion: Digital health interventions were found to be largely acceptable and convenient ways to deliver care to pediatric cancer patients, although challenges were also noted	Ind: Patients Type: Mult / NS Cont: Mult / NS	Care: Mult / NS HI: Mult / NS Tech: Text messaging / SMS, eHealth, Mobile application, Other (Virtual reality, Wearable devices)	MA: No Comp: No Type: Systematic QA: Yes	No
Cheng (2021) Inc: earliest available - 2019 N: 11 Search: Adolescent young adult + cancer + symptoms + telehealth	Purpose: Evaluate the effect of digital health technologies on symptom management across the pediatric cancer continuum Conclusion: Evidence was mixed and inconclusive, though there was a trend for stronger effects for interventions with more interactivity.	Ind: Patients Type: Mult / NS Cont: Mult / NS	Care: Disease detection or management HI: Mult / NS Tech: Synchronous telehealth, Text messaging / SMS, eHealth, Mobile application, Other (Virtual reality, social humanoid robot-assisted therapy)	MA: No Comp: No Type: Systematic QA: No	No

Chirico (2016) Inc: 1993 - 2013 N: 19 Search: Cancer + virtual reality	Purpose: Describe studies testing virtual reality interventions with cancer patients Conclusion: Virtual reality intervention studies have shown positive impact on patients' emotional well-being and distress	Ind: Patients Type: Mult / NS Cont: Treatment / symptom management	Care: Psychosocial support / distress management HI: Mult / NS Tech: Other (Virtual reality)	MA: No Comp: No Type: Systematic QA: No	No
Cho (2021) Inc: 2010 - 2020 N: 33 Search: Cancer + symptom self-reporting + technology	Purpose: Describe acceptance and use of home-based electronic symptom self-reporting systems by patients with cancer Conclusion: Acceptance and use of home-based electronic symptom self-reporting systems varied, and lack of access to technology is a barrier to adopting these systems	Ind: Patients Type: Mult / NS Cont: Treatment / symptom management	Care: Disease detection or management HI: Mult / NS Tech: Text messaging / SMS, eHealth, Mobile application, Other (Electronic Health Records / Patient portals; Interactive Voice Response)	MA: No Comp: No Type: Systematic QA: No	Yes (acceptability, feasibility)
Choi (2018) Inc: 2007 - 2017 N: 18 Search: Skin cancer + mHealth	Purpose: Describe the use of mHealth across the skin cancer continuum Conclusion: Studies have used mHealth approaches to skin cancer prevention and evaluated diagnostic accuracy and feasibility, but not all phases of skin cancer have been addressed	Ind: Patients Type: Skin / Melanoma Cont: Mult / NS	Care: Health behavior change, Disease detection or management HI: Mult / NS Tech: Text messaging / SMS, Email / secure messaging, Mobile application	MA: No Comp: No Type: Systematic QA: No	Yes (acceptability, appropriateness, feasibility)
Chow (2021) Inc: 1999 - 2019 N: 9 Search: Pain OR anxiety + virtual reality	Purpose: Evaluate impact of virtual reality on pain and/or anxiety outcomes in cancer patients undergoing procedures and to identify limitations in the literature Conclusion: Evidence is inconclusive that virtual reality interventions impact cancer patients' pain or anxiety during medical procedures	Ind: Patients Type: Mult / NS Cont: Treatment / symptom management	Care: Psychosocial support / distress management HI: Mult / NS Tech: Other (Virtual reality)	MA: No Comp: Yes: Any Type: Systematic QA: Yes	No

Christopherson (2022) Inc: earliest available - 2020 N: 6 Search: Cancer + exercise + videoconferencing / video games / virtual reality	Purpose: Evaluate the effect of video games and videoconferencing physical activity interventions for adolescent young adult cancer survivors Conclusion: Although video games and videoconferencing physical activity interventions show promise for improving quality of life and fatigue, more rigorous studies targeting adolescent young adult survivors specifically are necessary	Ind: Patients Type: Mult / NS Cont: Mult / NS	Care: Health behavior change HI: Mult / NS Tech: Synchronous telehealth, Other (video games)	MA: No Comp: No Type: Systematic QA: No	No
Coughlin (2016) Inc: earliest available - 2015 N: 6 Search: Cancer prevention + smartphone	Purpose: Describe mobile applications for preventing cancer through healthy lifestyle behavior modification Conclusion: Four trials of applications for smoking cessation and two from sun safety were identified; further research is needed to establish the capabilities of apps for cancer prevention	Ind: Patients Type: Mult / NS Cont: Prevention	Care: Health behavior change HI: Mult / NS Tech: Mobile application	MA: No Comp: No Type: Exploratory QA: No*	No
Cox (2017) Inc: 2006 - 2016 N: 22 Search: Cancer survivors + survivor experience + eHealth	Purpose: Identify, appraise, and synthesize qualitative data about adult cancer patients' experiences with telehealth interventions Conclusion: Telehealth interventions can provide cancer patients convenient and personalized care and reassurance	Ind: Patients Type: Mult / NS Cont: Mult / NS	Care: Mult / NS HI: Healthcare professional Tech: Synchronous telehealth, Email / secure messaging, eHealth, Mobile application	MA: No Comp: No Type: Systematic QA: No	No
Curry (2021) Inc: earliest available - 2020 N: 8 Search: Lung cancer + Internet	Purpose: Evaluate the feasibility, acceptability, and potential efficacy of online supportive care interventions for lung cancer patients and survivors Conclusion: Most studies were small, but preliminary evidence suggests online supportive care interventions among lung cancer patients and survivors are feasible and acceptable	Ind: Patients, Family Type: Lung Cont: Mult / NS	Care: Mult / NS HI: Mult / NS Tech: Synchronous telehealth, eHealth, Mobile application	MA: No Comp: No Type: Systematic QA: Yes	Yes (acceptability, feasibility, fidelity)

Darley (2021) Inc: 2005 - 2021 N: 28 Search: Cancer + experience + eHealth	Purpose: Synthesize qualitative evidence regarding experiences of people with cancer and their family caregivers using eHealth technology Conclusion: Patients and caregivers appreciated the role of eHealth in their cancer care, particularly for providing personalized information around the time of diagnosis and treatment	Ind: Patients, Family Type: Mult / NS Cont: Mult / NS	Care: Mult / NS HI: Mult / NS Tech: Synchronous telehealth, eHealth, Mobile application	MA: No Comp: No Type: Narrative QA: Yes	No
de Queiroz (2021) Inc: 2010 - 2020 N: 121 (analysis 1) / 15 (analysis 2) Search: Cancer + self-management + wearables	Purpose: Describe applications and benefits of using Internet of Things techniques - particularly wearable devices - on symptom management, quality of life, and survival in cancer patients undergoing treatment Conclusion: Interventions utilizing Internet of Things techniques contributed positively to the monitoring of cancer patients, improving their quality of life and managing adverse effects of cancer treatment	Ind: Patients Type: Mult / NS Cont: Treatment / symptom management	Care: Mult / NS HI: Mult / NS Tech: Synchronous telehealth, eHealth, Mobile application, Other (wearable devices)	MA: No Comp: No Type: Systematic QA: No	Yes (feasibility, fidelity)
Delemere (2021) Inc: earliest available - 2020 N: 16 Search: Cancer + Pediatric + telehealth + family	Purpose: Describe connected health for supporting family members of pediatric cancer patients Conclusion: Connected health interventions hold significant potential to support families affected by pediatric cancer, but studies with more robust designs are needed.	Ind: Family Type: Mult / NS Cont: Mult / NS	Care: Mult / NS HI: Mult / NS Tech: Synchronous telehealth, eHealth, Mobile application	MA: No Comp: No Type: Systematic QA: No	Yes (acceptability, feasibility)
Dickinson (2014) Inc: 2000 - 2014 N: 17 Search: Cancer + follow-up care + telehealth	Purpose: Evaluate clinical safety, acceptability, cost effectiveness, and impact on quality of life of telehealth-delivered follow-up cancer care Conclusion: Evidence suggests telehealth for follow-up cancer care is clinically safe and acceptable, but there is insufficient evidence regarding its cost-effectiveness	Ind: Patients Type: Mult / NS Cont: Treatment / symptom management, Survivorship	Care: Mult / NS HI: Mult / NS Tech: Synchronous telehealth, eHealth, Mobile application, Other (Automated phone calls)	MA: No Comp: No Type: Systematic QA: No	Yes (acceptability, feasibility, cost)

Dorri (2020) Inc: earliest available - 2018 N: 16 Search: Breast cancer + physical activity + eHealth	Purpose: Evaluate the efficacy of eHealth physical activity interventions for breast cancer patients Conclusion: eHealth interventions can improve physical activity in breast cancer patients, but there is a need for interventions tailored to breast cancer specifically	Ind: Patients Type: Breast Cont: Treatment / symptom management	Care: Health behavior change HI: Mult / NS Tech: eHealth, Mobile application	MA: No Comp: No Type: Systematic QA: No	No
Elepaño (2021) Inc: earliest available - 2020 N: 10 Search: Colorectal cancer + screening + mHealth	Purpose: Compare the efficacy of mHealth interventions with standard care for increasing colorectal cancer screening rates Conclusion: The use of mHealth interventions is associated with greater colorectal cancer screening uptake relative to standard care, across different types of interventions	Ind: Patients Type: Colorectal Cont: Screening / diagnosis	Care: Health behavior change HI: Mult / NS Tech: Synchronous telehealth, Text messaging / SMS	MA: Yes Comp: Yes: Usual Care Type: Systematic QA: Yes MA Out: mHealth interventions were associated with greater rates of colorectal screening participation relative to usual care	No
Escriva Boulley (2018) Inc: earliest available - 2017 N: 29 Search: Cancer + intervention + digital health	Purpose: Describe digital health interventions for cancer patients, engagement with these interventions, and effects on psychosocial variables Conclusion: Results were inconsistent due to study heterogeneity, although studies suggested digital interventions could help patients and survivors cope with the disease	Ind: Patients Type: Mult / NS Cont: Treatment / symptom management, Survivorship	Care: Mult / NS HI: Mult / NS Tech: Synchronous telehealth, Text messaging / SMS, eHealth, Mobile application	MA: No Comp: No Type: Systematic QA: No	Yes (acceptability, feasibility, fidelity)
Ester (2021) Inc: earliest available - 2021 N: 71 Search: Cancer + exercise + eHealth	Purpose: Describe up-to-date evidence on eHealth physical activity interventions for adults with cancer Conclusion: eHealth interventions can increase physical activity among adult cancer patients, with specific components linked with greater effectiveness	Ind: Patients Type: Mult / NS Cont: Mult / NS	Care: Health behavior change HI: Mult / NS Tech: Synchronous telehealth, Text messaging / SMS, Email / secure messaging, eHealth, Mobile application, Other (wearable devices)	MA: No Comp: No Type: Systematic QA: Yes	No

Finch (2016) Inc: 2001 - 2015 N: 8 Search: Skin cancer + mobile phone	Purpose: Evaluate available literature using text messaging and mHealth interventions for skin cancer prevention Conclusion: Self-reported behavioral changes are promising, but there is a lack of evidence of impact on objective measures (e.g., sunburn)	Ind: Patients Type: Skin / Melanoma Cont: Prevention	Care: Health behavior change HI: Mult / NS Tech: Text messaging / SMS, Mobile application, Email / secure messaging	MA: No Comp: No Type: Systematic QA: No	No
Finnane (2017) Inc: 2009 - 2017 N: 21 Search: Skin cancer + teledermatology	Purpose: Compare accuracy and patient/clinician time between teledermatology and usual care, and describe enablers and barriers to teledermatology adoption Conclusion: Accuracy of face-to-face diagnosis is generally higher than teledermatology; however, teledermatology reduced wait time and generally had high patient satisfaction.	Ind: Patients Type: Skin / Melanoma Cont: Screening / diagnosis	Care: Disease detection or management HI: Healthcare professional Tech: Synchronous telehealth, Other (store-and-forward image transfer)	MA: No Comp: No Type: Systematic QA: No	Yes (acceptability)
Forbes (2019) Inc: earliest available - 2017 N: 16 Search: Prostate cancer + intervention evaluation + supportive care outcomes + eHealth	Purpose: Evaluate the feasibility, acceptability, and efficacy of online supportive care interventions for prostate cancer survivors Conclusion: Preliminary evidence supports the use of online supportive care among prostate cancer survivors, but more robust evidence is needed	Ind: Patients Type: Prostate Cont: Mult / NS	Care: Mult / NS HI: Mult / NS Tech: Synchronous telehealth, eHealth	MA: No Comp: No Type: Systematic QA: Yes	Yes (acceptability, feasibility, fidelity, cost)
Fournier (2018) Inc: 2011 - 2016 N: 7 Search: Cancer + genetic counseling + telehealth	Purpose: Evaluate the efficacy of delivering genetic counseling for breast and ovarian cancer by telephone and telehealth Conclusion: Knowledge, distress, and satisfaction were equivalent between in-person and telehealth counseling; testing was higher among in-person, but convenience was greater and cost was lower for telehealth	Ind: Patients Type: Breast, Gynecologic Cont: Prevention	Care: Medical decision making HI: Mult / NS Tech: Synchronous telehealth	MA: No Comp: No Type: Integrative QA: No*	Yes (acceptability, cost)

Freeman (2020) Inc: earliest available - 2019 N: 9 Search: Skin cancer + mHealth	Purpose: Evaluate studies examining the accuracy of algorithm-based smartphone applications to assess risk of skin cancer from suspicious skin lesions Conclusion: Current algorithm-based smartphone applications cannot be relied on detect all cases of skin cancer	Ind: Patients Type: Skin / Melanoma Cont: Screening / diagnosis	Care: Disease detection or management HI: None- fully-automated Tech: Mobile application	MA: No Comp: No Type: Systematic QA: Yes	No
Fridriksdottir (2018) Inc: earliest available - 2021 N: 20 Search: Cancer + symptom management + randomized clinical trial + Internet	Purpose: Describe the effect of web-based interventions on cancer patients' symptoms Conclusion: Web-based interventions have promise to feasibly address cancer symptom management	Ind: Patients Type: Mult / NS Cont: Mult / NS	Care: Mult / NS HI: Mult / NS Tech: Synchronous telehealth, Email / secure messaging, eHealth, Mobile application	MA: No Comp: Yes: Any Type: Narrative systematic QA: Yes	No
Fung (2022) Inc: 2005 - 2020 N: 18 Search: Cancer + mindfulness-based meditation + eHealth	Purpose: Describe the effectiveness of eHealth mindfulness-based interventions on anxiety, depression, mindfulness, and quality of life among cancer patients and survivors Conclusion: eHealth mindfulness-based interventions led to small reductions in anxiety and depression; positive effects on quality of life and mindfulness were mixed	Ind: Patients Type: Mult / NS Cont: Mult / NS	Care: Psychosocial support / distress management HI: Mult / NS Tech: Synchronous telehealth, eHealth, Mobile application	MA: Yes Comp: Yes: Any Type: Systematic QA: Yes MA Out: eHealth mindfulness-based interventions showed small positive effects for anxiety and depression; there were no effects for quality of life or mindfulness	No

Furness (2020) Inc: 2007 - 2019 N: 24 Search: Health behavior change + telehealth	Purpose: Evaluate the efficacy of eHealth behavior change interventions for cancer patients and survivors Conclusion: Physical activity and dietary eHealth interventions have a small to moderate impact on cancer patient and survivor behavior change; there is insufficient evidence to compare synchronous and asynchronous delivery methods	Ind: Patients Type: Mult / NS Cont: Mult / NS	Care: Health behavior change HI: Mult / NS Tech: Synchronous telehealth, Text messaging / SMS, Email / secure messaging, eHealth, Mobile application, Other (automated phone calls)	MA: Yes Comp: Yes: Any Type: Systematic QA: Yes MA Out: eHealth interventions largely showed favorable outcomes relative to control for physical activity and dietary behavior change, quality of life, fatigue, depression, and anxiety (outcomes differed by assessment schedule and type of intervention delivery)	Yes (adoption, feasibility, fidelity)
Gambalunga (2021) Inc: earliest available - 2018 N: 7 Search: Cancer + medication adherence + mHealth	Purpose: Describe mobile health interventions for promoting adherence to oral cancer therapies Conclusion: Existing studies were insufficient to determine the efficacy of mobile health interventions for promoting adherence to oral cancer therapies	Ind: Patients Type: Mult / NS Cont: Treatment / symptom management	Care: Disease detection or management HI: Mult / NS Tech: Text messaging / SMS, Mobile application	MA: No Comp: No Type: Scoping QA: No*	No
Goodman (2022) Inc: earliest available - 2020 N: 40 Search: Cancer + palliative care + telehealth	Purpose: Characterize the engagement of people with advanced cancer with telehealth interventions Conclusion: There was a proportional relationship between engagement and intervention intensity; higher engagement occurred when delivered by tablet, computer, or smartphone app	Ind: Patients Type: Mult / NS Cont: Treatment / symptom monitoring, End-of-life	Care: Mult / NS HI: Mult / NS Tech: Synchronous telehealth, Text messaging / SMS, Email / secure messaging, eHealth, Mobile application	MA: No Comp: No Type: Systematic QA: Yes	Yes (adoption, fidelity)

Haberlin (2018) Inc: earliest available - 2017 N: 10 Search: Cancer + physical activity + telehealth	Purpose: Evaluate the efficacy of eHealth interventions to promote physical activity in cancer survivors Conclusion: eHealth interventions can improve physical activity in cancer survivors	Ind: Patients Type: Mult / NS Cont: Survivorship	Care: Health behavior change HI: Mult / NS Tech: Email / secure messaging, eHealth, Mobile application	MA: No Comp: No Type: Systematic QA: Yes	No
Han (2018) Inc: 1997-2017 N: 18 Search: Cancer + social media	Purpose: Review studies of research on interventions using social media in cancer care Conclusion: Interventions using social media have potential benefit to cancer prevention and management as they were largely acceptable, feasible, and potentially efficacious	Ind: Patients, Family Type: Mult / NS Cont: Mult / NS	Care: Mult / NS HI: Mult / NS Tech: Other (Social media)	MA: No Comp: No Type: Systematic QA: Yes	Yes (feasibility, cost)
Hernandez Silva (2019) Inc: earliest available - 2017 N: 7 Search: Cancer survivors + pain, psychological distress, fatigue, and/or sleep + mobile health applications	Purpose: Evaluate the effectiveness of mHealth applications for self-management of pain, psychological distress, fatigue, or sleep outcomes in adult cancer survivors Conclusion: Emerging evidence supports that self-management mHealth interventions can improve pain and fatigue outcomes in cancer survivors, and there is some promise for their use for psychological distress and sleep outcomes	Ind: Patients Type: Mult / NS Cont: Mult / NS	Care: Mult / NS HI: Mult / NS Tech: Mobile application	MA: No Comp: No Type: Systematic QA: Yes	Yes (acceptability, adoption, feasibility, fidelity)
Heynsbergh (2018) Inc: 2007 - 2017 N: 6 Search: Cancer + Caregiver + e/mHealth	Purpose: Evaluate the feasibility, usability, and acceptability of technology-based interventions for carers of people with cancer Conclusion: Interventions were generally feasible based on attrition rates and generally found to be acceptable, although usability varied	Ind: Family Type: Mult / NS Cont: Treatment / symptom management	Care: Psychosocial support / distress management HI: Mult / NS Tech: eHealth, Mobile application	MA: No Comp: No Type: Systematic QA: Yes	Yes (acceptability, appropriateness, feasibility, fidelity)

Hong, H. (2021) Inc: earliest available - 2019 N: 8 Search: Childhood cancer survivors + self-management + digital interventions	Purpose: Evaluate the evidence regarding digital interventions for childhood cancer survivors on health outcomes Conclusion: There are inconsistent results from digital interventions on improving health outcomes for childhood cancer survivors	Ind: Patients Type: Mult / NS Cont: Survivorship	Care: Mult / NS HI: Mult / NS Tech: Email / secure messaging, eHealth, Mobile application, Other (wearable devices, social media)	MA: Yes (article subset) Comp: No* (meta-analysis only of included RCTs with any control) Type: Systematic QA: Yes MA Out: Digital self-management interventions were not effective on health-related quality of life or moderate-to-vigorous physical activity	Yes (fidelity)
Hong, Y. (2020) Inc: 2000 - 2018 N: 13 Search: Cancer + patient-provider communication + digital systems	Purpose: Describe existing digital interventions to improve communication between cancer patients and survivors and their providers Conclusion: Evidence suggests the preliminary efficacy of digital interventions to improve patient-provider communication in the context of cancer	Ind: Patients, Family, Healthcare personnel Type: Mult / NS Cont: Mult / NS	Care: Other (patient-provider communication) HI: Mult / NS Tech: Text messaging / SMS, Email / secure messaging, eHealth	MA: No Comp: No Type: Systematic QA: No	No
Hopstaken (2021) Inc: 2000 - 2020 N: 17 Search: Neoplasms + patient portal	Purpose: Describe the effect of digital care platforms on quality of cancer care, as well as barriers and facilitators to their implementation Conclusion: Digital care platforms increase patients' access to information and enhance their self-efficacy; however, most studies were early-stage and within a specific patient population	Ind: Patients Type: Mult / NS Cont: Mult / NS	Care: Mult / NS HI: Mult / NS Tech: Email / secure messaging, eHealth, Other (Electronic health records)	MA: No Comp: No Type: Systematic QA: Yes	Yes (acceptability, appropriateness, feasibility)
Houghton (2019) Inc: earliest available - 2019 N: 82 Search: Breast cancer + mobile application	Purpose: Describe the use of mobile applications for breast cancer prevention Conclusion: Mobile applications have been studied across the cancer control continuum, although the majority of studies have targeted tertiary prevention	Ind: Patients Type: Breast Cont: Mult / NS	Care: Mult / NS HI: Mult / NS Tech: Mobile application	MA: No Comp: No Type: Systematic QA: No	No

Hwang (2020) Inc: earliest available - 2020 N: 15 Search: Cancer survivor + occupational health factors + telehealth	Purpose: Describe the evidence regarding use of telehealth interventions for occupational therapy among cancer survivors Conclusion: Telehealth approaches for occupational therapy for cancer survivors has positive therapeutic effects	Ind: Patients Type: Mult / NS Cont: Survivorship	Care: Mult / NS HI: Mult / NS Tech: Synchronous telehealth, eHealth, Mobile application	MA: No Comp: No Type: Systematic QA: Yes	Yes (acceptability, appropriateness, fidelity)
Ibeggazene (2021) Inc: earliest available - 2020 N: 3 Search: Cancer + exercise	Purpose: Evaluate the effects of remotely-delivered interventions to improve exercise behavior in sedentary adults living with and beyond cancer Conclusion: Evidence did not support efficacy of remote exercise interventions to improve exercise behavior or physical function in sedentary adults living with or beyond cancer	Ind: Patients Type: Mult / NS Cont: Treatment / symptom management, Survivorship	Care: Health behavior change HI: Mult / NS Tech: Synchronous telehealth, Email / secure messaging	MA: Yes Comp: Yes: Usual care Type: Systematic QA: Yes MA Out: Interventions produced greater aerobic exercise tolerance	No
Janssen (2017) Inc: earliest available - 2016 N: 26 Search: Cancer + interdisciplinary collaboration + telehealth	Purpose: Describe how eHealth facilitates interdisciplinary collaboration in cancer care Conclusion: Use of eHealth interventions to support interdisciplinary cancer care was widespread, although most research focused on development of interventions rather than long-term impact	Ind: Patients, Healthcare Personnel Type: Mult / NS Cont: Mult / NS	Care: Mult / NS HI: Mult / NS Tech: Synchronous telehealth, eHealth, Mobile application, Other (Electronic health records, store-and-forward image transfer)	MA: No Comp: No Type: Integrative QA: No*	No
Jongerius (2019) Inc: 2008 - 2018 N: 29 Search: Breast cancer + mHealth	Purpose: Describe studies on mHealth interventions in breast cancer care Conclusion: Outcomes were generally positive for apps relating to care management and survivorship, but there was less conclusive data on psychological interventions	Ind: Patients Type: Breast Cont: Mult / NS	Care: Mult / NS HI: Mult / NS Tech: Mobile application	MA: No Comp: No Type: Systematic QA: Yes	No

Kaltenbaugh (2015) Inc: earliest available - 2014 N: 6 Search: Cancer + caregivers + web-based	Purpose: Describe literature on web-based interventions for caregivers of people with cancer Conclusion: Web-based caregiver interventions may positively impact cancer caregivers through provision of information and support	Ind: Family Type: Mult / NS Cont: Mult / NS	Care: Mult / NS HI: Mult / NS Tech: Email / secure messaging, eHealth	MA: No Comp: No Type: Systematic QA: Yes	Yes (feasibility, fidelity)
Kamalumpundi (2022) Inc: 1991 - 2019 N: 23 Search: Cancer + palliative therapy + internet	Purpose: Determine the efficacy on emotional symptoms and describe intervention components of web- and mobile-based interventions among adults with advanced cancer Conclusion: Web- and mobile-based interventions were not efficacious in alleviating emotional symptoms in samples of part or all adults with advanced cancer	Ind: Patients Type: Mult / NS Cont: Mult / NS	Care: Psychosocial support / distress management HI: Mult / NS Tech: eHealth, Mobile application	MA: Yes Comp: No Type: Systematic QA: Yes MA Out: Web- and mobile- interventions showed no effect on anxiety or depression (overall or in RCT subset); for distress, there was no overall effect, but there was a small effect favoring interventions in RCTs	No
Kane (2021) Inc: earliest available - 2019 N: 37 Search: Advanced cancer + interventions + web and technological platforms	Purpose: Describe features of web- and technological interventions for patients with advanced cancer and their efficacy Conclusion: Interventions were complex and varied, but largely resulted in improvements in patients' quality of life and psychological well-being	Ind: Patients Type: Mult / NS Cont: Treatment / symptom management	Care: Mult / NS HI: Mult / NS Tech: eHealth, Mobile application	MA: No Comp: Yes: Any Type: Systematic QA: Yes	No
Kang (2018) Inc: earliest available - 2015 N: 4 Search: Cancer + sexual intervention + Internet	Purpose: Describe online interventions for sexual health among cancer survivors and/or their partners Conclusion: Online interventions appear effective in improving the psycho-sexual problems of cancer survivors and their partners	Ind: Patients, Family Type: Mult / NS Cont: Mult / NS	Care: Other (interventions for sexual health) HI: Healthcare professional Tech: Synchronous telehealth, Email / secure messaging, eHealth	MA: No Comp: No Type: Systematic QA: Yes	No

Karim (2020) Inc: 2009 - 2019 N: 9 Search: Sexual health + mobile technology	Purpose: Describe published evidence on mobile interventions for sexual health in adults with chronic diseases Conclusion: Studies showed a positive effect of interventions on sexual health outcomes	Ind: Patients, Family Type: Mult / NS Cont: Mult / NS	Care: Other (interventions for sexual health) HI: Mult / NS Tech: Synchronous telehealth, Email / secure messaging, eHealth	MA: No Comp: No Type: Systematic QA: Yes	Yes (acceptability, feasibility, fidelity)
Keikha (2022) Inc: earliest available - 2019 N: 45 Search: Breast cancer + exercise + telemedicine	Purpose: Describe technology-assisted interventions for improving physical activity in breast cancer patients Conclusion: Technology-assisted interventions can improve the health of breast cancer patients	Ind: Patients Type: Breast Cont: Mult / NS	Care: Health behavior change HI: Mult / NS Tech: Synchronous telehealth, Text messaging / SMS, Email / secure messaging, eHealth, Mobile application, Other (wearable devices)	MA: No Comp: No Type: Systematic QA: No	No
Khoo (2021) Inc: 2000 - 2020 N: 32 Search: Cancer + physical activity + mHealth	Purpose: Evaluate available literature on mobile health interventions to promote physical activity or reduce sedentary behavior in cancer survivors Conclusion: Strong evidence supports mHealth interventions increasing moderate-to-vigorous intensity physical activity in cancer survivors, but there is inconclusive evidence on mHealth intervention impact on total activity, step count, or sedentary behavior	Ind: Patients Type: Mult / NS Cont: Survivorship	Care: Health behavior change HI: Mult / NS Tech: Synchronous telehealth, Text messaging / SMS, Email / secure messaging, eHealth, Mobile application	MA: No Comp: No Type: Systematic QA: Yes	No

Kim (2019) Inc: earliest available - 2018 N: 7 Search: Cancer + cognitive rehabilitation + online	Purpose: Describe available computerized cognitive interventions for cancer survivors Conclusion: Computerized cognitive interventions had positive impacts on objective, subjective, and psychological aspects of cognitive concerns for cancer survivors	Ind: Patients Type: Mult / NS Cont: Survivorship	Care: Other (cognitive rehabilitation) HI: Mult / NS Tech: eHealth	MA: No Comp: No Type: Systematic QA: No	Yes (acceptability)
Kiss (2019) Inc: 1973 - 2018 N: 16 Search: Cancer + nutrition / physical activity + telehealth	Purpose: Describe and appraise the efficacy of technology-supported self-guided nutrition and physical activity interventions for people with cancer Conclusion: Technology-supported self-guided interventions have short-term benefits on physical activity level, fatigue, and some benefit on diet and health-related quality of life	Ind: Patients Type: Mult / NS Cont: Mult / NS	Care: Health behavior change HI: Mult / NS Tech: Synchronous telehealth, Text messaging / SMS, Email / secure messaging, eHealth, Mobile application, Other (social media, wearable devices)	MA: No Comp: Yes: Any Type: Systematic QA: Yes	Yes (adoption, feasibility, fidelity)
Kitamura (2010) Inc: 1966 - 2008 N: 19 Search: Cancer + telehealth	Purpose: Evaluate the feasibility of video consultation for assessment, monitoring, and management of cancer patients Conclusion: Evidence suggests video consultation is feasible and effective for cancer care; however, studies tended to be small and methodologically weak	Ind: Patients Type: Mult / NS Cont: Mult / NS	Care: Mult / NS HI: Healthcare professional Tech: Synchronous telehealth	MA: No Comp: No Type: Systematic QA: No	Yes (acceptability, fidelity, cost)
Koç (2022) Inc: 2015 - 2019 N: 16 Search: Breast cancer + telehealth	Purpose: Summarize evidence from studies of telehealth psychological interventions on the mental health of women with breast cancer Conclusion: There is evidence of the positive effect of telehealth programs on a wide range of psychological constructs among women with breast cancer	Ind: Patients Type: Breast Cont: Mult / NS	Care: Psychosocial support / distress management HI: Mult / NS Tech: Synchronous telehealth, eHealth, Mobile application	MA: No Comp: Yes: Any Type: Systematic QA: No	No

Kopp (2016) Inc: earliest available - 2015 N: 6 Search: Childhood cancer survivors + lifestyle intervention + chronic disease risk factors + electronic or mobile technologies	Purpose: Describe technology-based lifestyle interventions for childhood, adolescent, and young adult cancer survivors Conclusion: Few interventions have been developed and study to address prevention of chronic conditions in childhood, adolescent, and young adult cancer survivors	Ind: Patients Type: Mult / NS Cont: Survivorship	Care: Health behavior change HI: Mult / NS Tech: Synchronous telehealth, Text messaging / SMS, eHealth, other (Active gaming, social media)	MA: No Comp: No Type: Systematic QA: Yes	Yes (acceptability, feasibility)
Larson (2018) Inc: earliest available - 2016 N: 9 Search: Cancer + quality of life + telehealth	Purpose: Evaluate the effects of telehealth-based interventions providing emotional and symptom support on improving quality of life among cancer patients Conclusion: Telehealth interventions are non-inferior to usual care in improving quality of life among cancer patients	Ind: Patients Type: Mult / NS Cont: Treatment / symptom management	Care: Mult / NS HI: Mult / NS Tech: Synchronous telehealth, eHealth	MA: Yes Comp: No Type: Systematic QA: No MA Out: telehealth interventions appear to produce a comparable beneficial effect on quality of life as usual care	No
Larson (2020) Inc: earliest available - 2017 N: 11 Search: Cancer + quality of life + telehealth	Purpose: Compare the effect of telehealth interventions to usual care on cancer survivors' quality of life Conclusion: Evidence suggests a large effect of telehealth interventions on cancer survivors' quality of life relative to usual care	Ind: Patients Type: Mult / NS Cont: Survivorship	Care: Mult / NS HI: Mult / NS Tech: Synchronous telehealth, Email / secure messaging, eHealth	MA: Yes Comp: Yes: Usual Care Type: Systematic QA: Yes MA Out: Interventions produced greater improvements in quality of life	No
Li, J (2021) Inc: earliest available - 2021 N: 28 Search: Cancer + telehealth	Purpose: Evaluate the efficacy of telehealth interventions on quality of life among cancer survivors Conclusion: Telehealth interventions are effective in improving cancer survivors' quality of life, particularly mobile applications and short-term interventions	Ind: Patients Type: Mult / NS Cont: Mult / NS	Care: Mult / NS HI: Mult / NS Tech: Synchronous telehealth, eHealth, Mobile application	MA: Yes Comp: Yes: Any Type: Systematic QA: Yes MA Out: Telehealth interventions show significant positive effects on survivors' quality of life.	No

Li, J (2022) Inc: earliest available - 2020 N: 25 Search: Cancer + pain / fatigue / sleep disorder + eHealth	Purpose: Evaluate the efficacy of eHealth interventions on fatigue, pain, and sleep disorders in cancer survivors Conclusion: eHealth interventions have a positive impact on pain interference and sleep disorders, but not pain severity or fatigue in cancer survivors	Ind: Patients Type: Mult / NS Cont: Survivorship	Care: Disease detection or management HI: Mult / NS Tech: Synchronous telehealth, Text messaging / SMS, eHealth, Mobile application	MA: Yes Comp: Yes: Any Type: Systematic QA: Yes MA Out: eHealth interventions had a positive impact on pain interference and sleep but not on pain severity or fatigue	No
Li, Y (2022) Inc: earliest available - 2021 N: 7 Search: Cancer + caregivers + telemedicine	Purpose: Evaluate the impact of eHealth interventions on informal cancer caregivers' caregiving burden, depression, and quality of life Conclusion: eHealth interventions are convenient for caregivers, and there was a positive impact on depression and quality of life but not caregiving burden	Ind: Family Type: Mult / NS Cont: Mult / NS	Care: Psychosocial support / distress management HI: Mult / NS Tech: Synchronous telehealth, eHealth, Mobile application	MA: Yes Comp: Yes: Any Type: Systematic QA: Yes MA Out: eHealth interventions showed significant favorable outcomes on caregivers' depression and quality of life, but not on caregiver burden	No
Lim (2019) Inc: earliest available - 2017 N: 5 Search: Cancer + adolescent / young adult + health education + Internet	Purpose: Evaluate the impact of technology-based interventions on empowerment-related outcomes for children, adolescents, and young adults with cancer Conclusion: There is inconclusive evidence on the impact of technology-based interventions on empowerment-related outcomes for children, adolescents, and young adults with cancer	Ind: Patients Type: Mult / NS Cont: Treatment / symptom management	Care: Mult / NS HI: Mult / NS Tech: eHealth, other (interactive humanoid robot)	MA: No Comp: Yes: Any Type: Systematic QA: Yes	No

Liptrott (2018) Inc: earliest available - 2014 N: 48 Search: Cancer + acceptability + telehealth	Purpose: Evaluate cancer patients' and survivors' perceived acceptability of, and satisfaction with, telephone-delivered interventions Conclusion: Evidence was mixed regarding quality of support, impact, and need for telephone-delivered interventions, and further rigorous study is warranted	Ind: Patients Type: Mult / NS Cont: Treatment / symptom management, Survivorship	Care: Mult / NS HI: Mult / NS Tech: Synchronous telehealth	MA: No Comp: No Type: Systematic QA: Yes	Yes (acceptability)
Lopez-Rodriguez (2020) Inc: 2008 - 2018 N: 8 Search: Pediatric oncology patients + pain, anxiety, or depression + technological interventions	Purpose: Describe the evidence regarding use of technology-based interventions for pain, anxiety, and depression in children and adolescents with cancer Conclusion: Technology-based interventions can be used therapeutically for children and adolescents with cancer	Ind: Patients Type: Mult / NS Cont: Treatment / symptom management	Care: Psychosocial support / distress management HI: Mult / NS Tech: other (Virtual reality, video game, interactive robot)	MA: No Comp: No Type: Systematic QA: Yes	No
Luo (2021) Inc: earliest available - 2020 N: 24 Search: Breast cancer + self-management + randomized controlled trial + mHealth	Purpose: Evaluate the effectiveness of mobile health-based self-management interventions in breast cancer patients Conclusion: Mobile health-based interventions could potentially improve breast cancer patients' self-management behavior	Ind: Patients Type: Breast Cont: Mult / NS	Care: Mult / NS HI: Mult / NS Tech: Text messaging / secure messaging, eHealth, Mobile application, Other (social media)	MA: Yes Comp: Yes: Usual Care Type: Systematic QA: Yes MA Out: Mobile health-based self-management interventions improved breast cancer survivors' functional exercise compliance, self-efficacy, health related quality of life, lymphedema, and anxiety; there was no effect on symptom relief, role functioning, depression, or social support	No

Magalhães (2020) Inc: earliest available - 2019 N: 26 Search: Cancer + chemotherapy + mHealth	Purpose: Describe available mobile applications for cancer patients undergoing chemotherapy Conclusion: Mobile applications appear effective in monitoring adherence and supporting self-management of complications during chemotherapy	Ind: Patients Type: Mult / NS Cont: Treatment / symptom management	Care: Disease detection or management HI: Mult / NS Tech: Mobile application	MA: No Comp: No Type: Scoping QA: No*	No
Magalhães (2021) Inc: earliest available - 2019 N: 10 Search: Cancer + chemotherapy + telehealth	Purpose: Describe available evidence regarding the use of mobile apps used during chemotherapy Conclusion: Mobile apps are likely useful and acceptable to monitor and support self-management of treatment-related complications	Ind: Patients Type: Mult / NS Cont: Treatment / symptom monitoring	Care: Disease detection or management HI: Mult / NS Tech: Synchronous telehealth, Text messaging / SMS, eHealth, Mobile application	MA: No Comp: No Type: Systematic QA: Yes	Yes (acceptability, feasibility, fidelity)
Marthick (2021) Inc: 2000 - 2020 N: 20 Search: Cancer + supportive care + digital health	Purpose: Evaluate digital health interventions for supportive care in cancer Conclusion: Digital health interventions can improve health-related quality of life, symptom burden, depression, and functional capacity among people with cancer	Ind: Patients Type: Mult / NS Cont: Treatment / symptom management	Care: Mult / NS HI: Mult / NS Tech: Synchronous telehealth, Email / secure messaging, eHealth, Mobile application, Other (wearable devices)	MA: No Comp: No Type: Systematic QA: Yes	No
Marzorati (2018) Inc: earliest available - 2017 N: 24 Search: Cancer + caregivers + telehealth	Purpose: Characterize telehealth tools for family members of people with cancer Conclusion: Interventions utilized web-based platforms and telephone calls, and all showed positive, but small effects on targeted outcomes	Ind: Family Type: Mult / NS Cont: Mult / NS	Care: Mult / NS HI: Mult / NS Tech: Synchronous telehealth	MA: No Comp: No Type: Systematic QA: No	Yes (acceptability)

Mata (2014) Inc: earliest available - 2014 N: 5 Search: Prostatectomy + telehealth	Purpose: Evaluate clinical trials of telephone follow-up interventions for men following radical prostatectomy Conclusion: Interventions focused on psychological support and addressing physical symptoms following treatment, and support the use of monitoring post-prostatectomy patients via the telephone	Ind: Patients Type: Prostate Cont: Treatment / symptom management	Care: Mult / NS HI: Healthcare professional Tech: Synchronous telehealth	MA: No Comp: No Type: Systematic QA: Yes	No
Matis (2020) Inc: earliest available - 2020 N: 29 Search: Cancer + mindfulness intervention + eHealth	Purpose: Characterize and evaluate (feasibility, efficacy) eHealth mindfulness-based interventions for improving psychological well-being among people with cancer Conclusion: Effects were heterogeneous, but eHealth appears to be supported as an appropriate way to deliver mindfulness interventions to people with cancer	Ind: Patients Type: Mult / NS Cont: Mult / NS	Care: Psychosocial support / distress management HI: Mult / NS Tech: Synchronous telehealth, Email / secure messaging, eHealth, Mobile application	MA: No Comp: No Type: Systematic QA: Yes	Yes (feasibility, fidelity)
McAlpine (2015) Inc: earliest available - 2014 N: 14 Search: Cancer + Quality of life / survivorship + online community	Purpose: Evaluate the efficacy of online resources that connect cancer patients with their healthcare clinicians and with supportive or educational resources Conclusion: Evidence was mixed, including studies with positive effects on quality of life as well as those showing poorer outcomes among intervention participants	Ind: Patients Type: Mult / NS Cont: Mult / NS	Care: Mult / NS HI: Mult / NS Tech: Email / secure messaging, eHealth	MA: No Comp: No Type: Systematic QA: No	No
McCann (2019) Inc: earliest available - 2017 N: 43 Search: Cancer + Adolescent / young adult + telehealth	Purpose: Evaluate quality, feasibility, and efficacy of digital health interventions for adolescents and young adults living with and beyond cancer Conclusion: Numerous digital health interventions have been developed to support adolescents and young adults with cancer; however, few have been deployed or implemented at scale	Ind: Patients Type: Mult / NS Cont: Treatment / symptom management, Survivorship	Care: Mult / NS HI: Mult / NS Tech: Synchronous telehealth, Text messaging / SMS, Email / secure messaging, eHealth, Mobile application	MA: No Comp: No Type: Systematic QA: Yes	No

Mehdizadeh (2019) Inc: 2007 - 2018 N: 24 Search: Cancer + caregivers / children + telehealth	Purpose: Characterize smartphone apps used to help children and adolescents living with and beyond cancer and their families Conclusion: Multiple smartphone apps have been developed to support children and adolescents following cancer, but few for supporting their families	Ind: Patients, Family Type: Mult / NS Cont: Treatment / symptom management, Survivorship	Care: Mult / NS HI: Mult / NS Tech: Mobile application	MA: No Comp: No Type: Scoping QA: No*	No
Mikles (2021) Inc: 2000 - 2020 N: 60 Search: Cancer survivorship + care planning + Health information technology	Purpose: Evaluate functions and impacts of electronic cancer survivorship care planning interventions on patient and provider outcomes Conclusion: Features of electronic interventions that engaged users persistently over time were associated with better health and quality-of-life outcomes	Ind: Patients, Family, Healthcare Personnel Type: Mult / NS Cont: Survivorship	Care: Mult / NS HI: Mult / NS Tech: Email / secure messaging, eHealth, Other (Electronic health record)	MA: No Comp: No Type: Systematic QA: Yes	Yes (acceptability, appropriateness, feasibility)
Moradian (2018) Inc: 2000 - 2016 N: 6 Search: Cancer + chemotherapy + self-management + Internet	Purpose: Evaluate the efficacy of Internet-based interventions on cancer chemotherapy-related physical symptoms and quality of life and identify processes for implementing these interventions into oncology practice Conclusion: Evidence generally supports the use of Internet interventions for supporting patient engagement and self-management of chemotherapy-related symptoms, but further research is needed for their uptake in routine clinical practice	Ind: Patients Type: Mult / NS Cont: Treatment / symptom management	Care: Disease detection or management HI: Mult / NS Tech: Email / secure messaging, eHealth	MA: No Comp: Yes: Any Type: Systematic QA: Yes	Yes (fidelity)

Moretto (2019) Inc: 2013 - 2018 N: 19 Search: Outpatient chemotherapy + telehealth	Purpose: Evaluate research on telephone follow-up interventions by nurses for patients undergoing outpatient chemotherapy treatment Conclusion: Nurse-led telephone interventions for patients undergoing outpatient chemotherapy are common, and primarily address symptom management, quality of life, self-efficacy, and psychosocial support	Ind: Patients Type: Mult / NS Cont: Treatment / symptom management	Care: Mult / NS HI: Healthcare professional Tech: Synchronous telehealth	MA: No Comp: No Type: Integrative QA: Yes	No
Morris (2022) Inc: 2009 - 2021 N: 54 Search: Cancer + rural health + telemedicine	Purpose: Critically examine research on how digital technologies have supported rural oncology care Conclusion: Rural cancer survivors value digital health approaches in cancer care, although ease of use and technological requirements are important to consider for this population	Ind: Patients, Family, Healthcare Personnel Type: Mult / NS Cont: Mult / NS	Care: Mult / NS HI: Mult / NS Tech: Synchronous telehealth, eHealth, Mobile application	MA: No Comp: No Type: Systematic QA: Yes	Yes (acceptability, feasibility, fidelity, cost)
Morrison (2020) Inc: 2010 - 2020 N: 29 Search: Cancer + exercise + telehealth	Purpose: Evaluate the feasibility and impact of telehealth exercise interventions for individuals diagnosed with cancer Conclusion: Across studies, patients showed good adherence, symptom improvement, and reported a positive experience using telehealth exercise interventions, with no adverse events reported	Ind: Patients Type: Mult / NS Cont: Treatment / symptom management, Survivorship	Care: Health behavior change HI: Mult / NS Tech: Synchronous telehealth, Text messaging / SMS, eHealth, Mobile application	MA: No Comp: No Type: Rapid QA: Yes	Yes (feasibility, fidelity)
Okuyama (2015) Inc: 1966 - 2013 N: 20 Search: Cancer + telephone counseling	Purpose: Describe the efficacy of psychosocial telephone interventions for patients with cancer Conclusion: Methodological concerns and lack of consistency in adhering to CONSORT guidelines was found; this body of research would benefit from rigorous, theory-based RCTs to provide more definitive evidence on psychosocial telephone interventions for patients with cancer	Ind: Patients Type: Mult / NS Cont: Mult / NS	Care: Psychosocial support / distress management HI: Mult / NS Tech: Synchronous telehealth	MA: No Comp: Yes: Any Type: Systematic QA: Yes	No

Osborn (2020) Inc: earliest available - 2018 N: 17 Search: Cancer + clinical outcomes + mobile applications	Purpose: Evaluate the effect of mHealth applications relative to usual care on common clinical outcomes among cancer patients Conclusion: Evidence supports mHealth applications for cancer symptom control, but there was little data on other common clinical outcomes	Ind: Patients Type: Mult / NS Cont: Treatment / symptom management	Care: Mult / NS HI: Mult / NS Tech: eHealth, Mobile application	MA: No Comp: Yes: Usual care Type: Critical appraisal QA: No*	Yes (acceptability)
Öter (2022) Inc: 2020 - 2021 N: 5 Search: Breast cancer + COVID-19 + telehealth	Purpose: Evaluate the effectiveness of telemedicine to continue breast cancer follow-up care during the COVID-19 pandemic Conclusion: Telemedicine was an effective method to continue outpatient care for breast cancer patients during the pandemic, although demand and benefit were affected by sociodemographic factors	Ind: Patients Type: Breast Cont: Treatment / symptom management	Care: Disease detection or management HI: Mult / NS Tech: Synchronous telehealth, Text messaging / SMS	MA: No Comp: No Type: Scoping QA: No*	No
Ownsworth (2021) Inc: 1980 - 2020 N: 17 Search: Brain cancer + supportive care + telehealth	Purpose: Evaluate the feasibility, acceptability, and efficacy of telehealth supportive care interventions for adults with primary brain tumour and their family caregivers Conclusion: Delivering supportive care to brain cancer patients and their caregivers is feasible and acceptable, with generally better adherence and gains from synchronous versus asynchronous or self-guided interventions	Ind: Patients, Family Type: Primary Brain Tumor Cont: Treatment / symptom management, Survivorship	Care: Mult / NS HI: Mult / NS Tech: Synchronous telehealth, Email / secure messaging, eHealth	MA: No Comp: No Type: Systematic QA: Yes	Yes (acceptability, feasibility, fidelity)

Pang (2020) Inc: earliest available - 2020 N: 8 Search: Lung cancer + telehealth	Purpose: Evaluate the efficacy of telehealth relative to usual care on quality of life in lung cancer patients Conclusion: telehealth interventions produced a superior effect on quality of life and psychological outcomes relative to usual care in lung cancer patients	Ind: Patients Type: Lung Cont: Treatment / symptom management	Care: Psychosocial support / distress management HI: Mult / NS Tech: Synchronous telehealth, eHealth	MA: Yes Comp: Yes: Usual Care Type: Systematic QA: Yes MA Out: telehealth interventions produce greater improvements than control for quality of life, anxiety, and depression, but no differences in fatigue or pain	No
Qan'ir (2019) Inc: 2000 - 2018 N: 10 Search: Prostate cancer + anxiety / depression / quality of life + telehealth	Purpose: Describe the characteristics of technology-based interventions and evaluate their effects on anxiety, depression, and quality of life in prostate cancer patients Conclusion: Evidence was insufficient to support effectiveness of technology-based interventions in prostate cancer on anxiety, depression, and quality of life	Ind: Patients Type: Prostate Cont: Treatment / symptom management, Survivorship	Care: Mult / NS HI: Mult / NS Tech: Synchronous telehealth, eHealth, Mobile application	MA: No Comp: No Type: Systematic QA: Yes	No
Ramsey (2020) Inc: earliest available - 2019 N: 21 Search: Cancer + adolescent / young adult + patient reported outcomes + telehealth	Purpose: Describe and evaluate the efficacy of e/mHealth interventions for pediatric and young adult cancer patients and survivors Conclusion: Evidence was mixed, but suggestive of positive effects for digital health interventions on emotional distress, health behavior change, health outcomes, and neurocognitive function in this population	Ind: Patients Type: Mult / NS Cont: Treatment / symptom management, Survivorship	Care: Mult / NS HI: Mult / NS Tech: eHealth, Mobile application	MA: No Comp: No Type: Systematic QA: Yes	Yes (acceptability, fidelity)

Rat (2018) Inc: 2007 - 2017 N: 25 Search: Skin cancer + telehealth	Purpose: Evaluate the evidence on the diagnostic performance, medical care impact, and technical feasibility of smartphone app store-and-forward teledermatology Conclusion: While store-and-forward teledermatology could improve access to care, there was insufficient evidence of the safety and efficacy of automated smartphone apps designed for this purpose	Ind: Patients Type: Skin / Melanoma Cont: Screening / diagnosis	Care: Disease detection or management HI: Mult / NS Tech: Mobile application, Other (store-and-forward image transfer)	MA: No Comp: No Type: Systematic QA: Yes	No
Ream (2020) Inc: earliest available - 2019 N: 32 Search: Cancer + physical and psychological symptoms associated with cancer + telephone	Purpose: Evaluate the effectiveness of telephone-delivered interventions for reducing symptoms associated with cancer and its treatment, which symptoms are most responsive, and whether certain configurations or duration/frequency of calls mediate effects Conclusion: While telephone interventions appear to relieve some symptoms, studies were small and evidence was heterogeneous, so confidence in the evidence is low	Ind: Patients Type: Mult / NS Cont: Mult / NS	Care: Mult / NS HI: Healthcare professional Tech: Synchronous telehealth	MA: No Comp: Yes: Usual Care or Other (telephone attention control) Type: Systematic QA: Yes	No

Roberts (2017) Inc: earliest available - 2017 N: 15 Search: Cancer survivor + physical activity / diet / sedentary behavior + digital behavior change intervention	Purpose: Assess the efficacy of health behavior interventions using digital technologies on physical activity, sedentary behavior, and diet in cancer survivors Conclusion: Digital behavior change interventions appear to improve physical activity and body mass index in cancer survivors, while evidence is mixed for diet	Ind: Patients Type: Mult / NS Cont: Mult / NS	Care: Health behavior change HI: Mult / NS Tech: Synchronous telehealth, Text messaging / SMS, Email / secure messaging, eHealth, Mobile application, Other (Active gaming, wearable devices)	MA: Yes Comp: No Type: Systematic QA: Yes MA Out: Digital behavior change interventions increased minutes of physical activity, and reduced body mass index/weight and fatigue. There was no impact on cancer-specific quality of life. Dietary outcomes could not be meta-analyzed due to variation in measurement approaches.	Yes (adoption, feasibility, fidelity)
Rossman (2021) Inc: 1992 - 2020 N: 27 Search: Cervical cancer + low- and middle-income countries + digital health	Purpose: Describe the efficacy, range, and implementation challenges of digital health strategies for cervical cancer control in low- and middle-income countries Conclusion: There is insufficient evidence to determine the effectiveness of digital health strategies for cervical cancer control throughout low- and middle-income countries; most available studies used digital health strategies to facilitate screening and treatment of precancerous legions, and key implementation challenges were identified	Ind: Patients Type: Gynecologic Cont: Screening / diagnosis	Care: Mult / NS HI: Mult / NS Tech: Synchronous telehealth, Text messaging / SMS, eHealth, Mobile application, Other (Store-and-forward image transfer)	MA: No Comp: No Type: Systematic QA: Yes	No

Ruco (2021) Inc: 2000 - 2020 N: 39 Search: Cancer + screening + social media or mHealth interventions	Purpose: Evaluate the effectiveness of social media and mHealth interventions to increase cancer screening participation and intentions for detectable cancers Conclusion: mHealth interventions have a significant effect on cancer screening participation; there was insufficient available evidence to determine efficacy of social media interventions	Ind: Patients Type: Breast, Colorectal, Gynecologic, Lung, Prostate Cont: Screening / diagnosis	Care: Health behavior change HI: Mult / NS Tech: Synchronous telehealth, Text messaging / SMS, Email / secure messaging, eHealth, Mobile application, Other (Social media)	MA: Yes (article subset) Comp: No* (meta-analysis only of included RCTs with any control) Type: Systematic QA: Yes MA Out: telehealth interventions produce more breast, cervical, and colorectal screening participation relative to control	No
Saeidzadeh (2021) Inc: 1991 - 2019 N: 19 Search: Cancer + symptom management + telehealth	Purpose: Evaluate efficacy of mobile- and web-based interventions addressing physical symptoms in people with advanced cancer Conclusion: Mobile- and web-delivered interventions were effective in reducing overall physical symptom burden in people with advanced cancer	Ind: Patients Type: Mult / NS Cont: Treatment / symptom management	Care: Mult / NS HI: Mult / NS Tech: eHealth, Mobile application	MA: Yes Comp: No Type: Systematic QA: Yes MA Out: telehealth interventions produce favorable improvement in physical symptoms, but no different outcome for pain or fatigue, relative to standard clinical implementation of care	No
Salmani (2020) Inc: 2008 - 2019 N: 23 Search: Cancer + screening + mobile health	Purpose: Examine the effectiveness of mobile health applications on cancer screening Conclusion: Mobile health applications have a positive impact on health-related behaviors and outcomes	Ind: Patients Type: Mult / NS Cont: Screening / diagnosis	Care: Mult / NS HI: Mult / NS Tech: Mobile application, Other (store-and-forward image transfer)	MA: No Comp: No Type: Systematic QA: No	Yes (acceptability)

Sanchez (2013) Inc: 2001 - 2010 N: 113 Search: Cancer prevention or control + intervention trial + eHealth interventions * (selected subset from an earlier systematic review, criteria not listed)	Purpose: Describe the extent to which pragmatic trial design features have been used and issues of translation, generalizability, and feasibility have been reported in studies of eHealth interventions in cancer prevention and control Conclusion: Few studies considered or reported key external validity issues, and few studies used innovative designs to address key translation issues	Ind: Patients Type: Mult / NS Cont: Mult / NS	Care: Mult / NS HI: Mult / NS Tech: Synchronous telehealth, Text messaging / SMS, Email / secure messaging, eHealth, Mobile application, Other (Interactive voice response calls)	MA: No Comp: No Type: Systematic QA: No	Yes (feasibility)
Seiler (2017) Inc: earliest available - 2016 N: 15 Search: Cancer + cancer-related fatigue + e/mHealth	Purpose: Examine the effectiveness of eHealth and mHealth interventions for the management of cancer-related fatigue Conclusion: eHealth interventions appear effective in helping cancer survivors to manage cancer-related fatigue, although randomized controlled trials with longer follow-up periods are warranted	Ind: Patients Type: Mult / NS Cont: Survivorship	Care: Mult / NS HI: Mult / NS Tech: eHealth	MA: Yes (article subset) Comp: No* (meta-analysis only of included RCTs with any control) Type: Systematic QA: Yes MA Out: telehealth interventions produced superior effects on fatigue, health-related quality of life, and depression relative to control	Yes (adoption, fidelity)
Sezgin (2022) Inc: earliest available - 2021 N: 6 Search: Lymphoma + randomized controlled trials + web-based interventions	Purpose: Evaluate the effect of web-based interventions on self-management and symptom management in patients with lymphoma Conclusion: Although quality of evidence was limited, evidence suggests technology-based interventions may improve outcomes in patients with lymphoma	Ind: Patients Type: Blood Cont: Treatment / symptom management	Care: Mult / NS HI: Mult / NS Tech: eHealth	MA: No Comp: Yes: Any Type: Systematic QA: Yes	No

Singh (2021) Inc: 2015 - 2020 N: 39 Search: Cancer + telehealth	Purpose: Summarize evidence from studies comparing virtual versus in-person cancer care Conclusion: Virtual psychological and genetic counseling are equivalent or non-inferior to similar in-person care, but there is limited data on clinical outcomes or supportive care	Ind: Patients Type: Mult / NS Cont: Treatment / symptom management	Care: Mult / NS HI: Mult / NS Tech: Synchronous telehealth	MA: No Comp: Yes: In-person Type: Systematic QA: Yes	Yes (acceptability, appropriateness, fidelity, cost)
Soloe (2021) Inc: 2010 - 2020 N: 23 Search: Cancer + healthcare provider training + mHealth	Purpose: Describe studies of cancer-based mHealth and eHealth education and training interventions for improving health care professionals' delivery of cancer care Conclusion: Evidence supports that mHealth and eHealth interventions can improve cancer care delivery	Ind: Healthcare personnel Type: Mult / NS Cont: Mult / NS	Care: Other (Trainings to improve cancer care delivery) HI: Mult / NS Tech: Synchronous telehealth, Text messaging / SMS, eHealth	MA: No Comp: No Type: Systematic QA: Yes	No
Son (2019) Inc: 2008 - 2018 N: 28 Search: Cancer + survivorship + health information technology	Purpose: Describe the use of health information technology programs in cancer survivorship care Conclusion: Studies generally demonstrated positive findings, but results were overall inconclusive due to methodological limitations of the literature	Ind: Patients Type: Mult / NS Cont: Survivorship	Care: Mult / NS HI: Mult / NS Tech: Text messaging / SMS, eHealth, Mobile application, Other (Electronic Health Records / Patient portals)	MA: No Comp: No Type: Comprehensive QA: Yes	No

Soon-Rim Suh (2017) Inc: 1996 - 2016 N: 16 Search: Cancer + nurse + intervention + telephone	Purpose: Evaluate the effects of nurse-led telephone-delivered supportive interventions for patients with cancer Conclusion: Nurse-led telephone interventions showed consistent positive impact on cancer symptoms and emotional distress among patients with cancer, although there was not an effect on adjustment or patient satisfaction	Ind: Patients Type: Mult / NS Cont: Treatment / symptom management	Care: Mult / NS HI: Healthcare professional Tech: Synchronous telehealth	MA: Yes Comp: Yes: Any Type: Systematic QA: Yes MA Out: Nurse-led telephone interventions showed positive impacts on cancer patients' cancer symptoms, emotional distress, self-care, and health-related quality of life; there was no effect on adjustment or patient satisfaction	No
Sotirova (2021) Inc: earliest available - 2020 N: 11 Search: Cancer + surgery, self-management, exercise, and response to intervention + Internet	Purpose: Describe adherence, acceptability, and satisfaction with exercise-based online self-management programs for post-surgical cancer rehabilitation Conclusion: Studies were heterogeneous; however, evidence suggests Internet-based approaches may be acceptable for delivering exercise-based interventions in post-surgical cancer rehabilitation	Ind: Patients Type: Mult / NS Cont: Other (post-surgery)	Care: Health behavior change HI: Mult / NS Tech: Email / secure messaging, eHealth, Mobile application	MA: No Comp: No Type: Systematic QA: Yes	Yes (acceptability, adoption, fidelity)
Suleman (2022) Inc: 2000 - 2021 N: 15 Search: Hematologic cancer + telehealth	Purpose: Describe the use and impact of virtual care among patients with hematologic malignancies Conclusion: Virtual care for patients with hematologic malignancies appears feasible and shows high patient satisfaction	Ind: Patients Type: Hematologic Cont: Treatment / symptom management	Care: Mult / NS HI: Mult / NS Tech: Synchronous telehealth, Mobile application	MA: No Comp: No Type: Scoping QA: No*	Yes (acceptability)

Tarver (2019) Inc: earliest available - 2016 N: 71 Search: Cancer + underserved populations + health information technology	Purpose: Describe current evidence on the use of cancer-specific patient-centered technologies among underserved populations Conclusion: Technologies seem to be effective, particularly when tailored, on improving cancer patient- and care-related outcomes among underserved populations	Ind: Patients Type: Mult / NS Cont: Mult / NS	Care: Mult / NS HI: Mult / NS Tech: Synchronous telehealth, Text messaging / SMS, eHealth, Mobile application	MA: No Comp: No Type: Systematic QA: No	Yes (acceptability)
Taylor (2020) Inc: 2007 - 2019 N: 23 Search: Hematologic cancer + eHealth	Purpose: Describe eHealth interventions for patients with hematological cancer across the illness trajectory Conclusion: Diverse applications of eHealth interventions have been tested among patients with hematological cancer, including those for providing information, self-help techniques, facilitating communication, and PRO monitoring	Ind: Patients Type: Hematologic Cont: Mult / NS	Care: Mult / NS HI: Mult / NS Tech: Synchronous telehealth, eHealth, Mobile application	MA: No Comp: No Type: Systematic QA: Yes	No
Thompson (2013) Inc: 2000 - 2012 N: 36 Search: Cancer + behavioral, psychological, and social aspects of cancer + new media	Purpose: Assess the inclusion of underserved racial and ethnic minority groups in research on new media interventions in cancer Conclusion: The potential of new media cancer interventions has largely not been realized among underserved racial and ethnic minority groups	Ind: Patients, Family Type: Mult / NS Cont: Mult / NS	Care: Mult / NS HI: Mult / NS Tech: Email / secure messaging, eHealth, Other (interactive voice response)	MA: No Comp: No Type: Systematic QA: No	No
Triberti (2019) Inc: 2005 - 2018 N: 24 Search: Breast cancer + quality of life + telehealth	Purpose: Evaluate use and efficacy of eHealth resources to improve quality of life of people with breast cancer Conclusion: Results are generally favorable for eHealth resources to improve quality of life of people with breast cancer, particularly those that target specific skills (e.g., coping) and multicomponent interventions	Ind: Patients Type: Breast Cont: Treatment / symptom management, Survivorship	Care: Mult / NS HI: Mult / NS Tech: Synchronous telehealth, eHealth, Mobile application	MA: No Comp: No Type: Systematic QA: No	No

Uy (2017) Inc: 2000 - 2017 N: 9 Search: Cancer + screening terms for breast, colorectal, gynecologic, and lung cancers + text messaging	Purpose: Assess the effect of text messaging interventions on screening for breast, cervical, colorectal, and lung cancers Conclusion: Text messaging interventions appear to moderately increase breast and cervical cancer screening rates and have a small effect on colorectal screening rates; no studies were evident for such interventions in lung cancer	Ind: Patients Type: Breast, Colorectal, Gynecologic Cont: Screening / diagnosis	Care: Health behavior change HI: Mult / NS Tech: Text messaging / SMS	MA: No Comp: No Type: Systematic QA: Yes	No
Ventura (2013) Inc: 2000 - 2012 N: 28 Search: Cancer + patient education / support + Internet	Purpose: Describe available supportive eHealth interventions for patients diagnosed with cancer Conclusion: Supportive eHealth interventions have led to positive effects, although there is inconsistency across study outcomes due to heterogeneity of studies	Ind: Patients Type: Mult / NS Cont: Mult / NS	Care: Mult / NS HI: Mult / NS Tech: eHealth	MA: No Comp: No Type: Integrative QA: Yes	No
Viola (2020) Inc: 2018 - 2019 N: 17 Search: Cancer + adolescent / young adult + digital health	Purpose: Describe and evaluate the quality of recent digital health interventions for adolescent young adult survivors Conclusion: Most studies focused on developing interventions and testing their feasibility and acceptability, with a critical gap in studies demonstrating the efficacy of these interventions	Ind: Patients Type: Mult / NS Cont: Treatment / symptom management, Survivorship	Care: Mult / NS HI: Mult / NS Tech: Synchronous telehealth, Text messaging / SMS, eHealth, Mobile application, Other (social media)	MA: No Comp: No Type: Systematic QA: Yes	No
Wan (2022) Inc: earliest available - 2021 N: 19 Search: Colorectal cancer + psychosocial interventions + web-based	Purpose: Evaluate the effectiveness of web-based psychosocial interventions on a range of outcomes for colorectal cancer patients Conclusion: Web-based psychosocial interventions are promising ways to address colorectal cancer patients' anxiety, depression, and distress, although evidence is inconsistent for self-efficacy and quality of life	Ind: Patients Type: Colorectal Cont: Mult / NS	Care: Psychosocial support / distress management HI: Mult / NS Tech: Email / secure messaging, eHealth, Mobile application	MA: Yes Comp: No* (meta-analysis only of included RCTs with any control) Type: Systematic QA: Yes MA Out: Web-based psychosocial interventions showed positive impacts on patients' self-efficacy, anxiety, and depression, but not quality of life	Yes (acceptability, fidelity)

Wang (2020) Inc: earliest available - 2019 N: 7 Search: Cancer + psychoeducation + randomized controlled trial + telehealth	Purpose: Evaluate the effect of Internet-based psychoeducational interventions relative to usual care among cancer patients Conclusion: Internet-based psychoeducational interventions reduce fatigue and depression relative to usual care among cancer patients	Ind: Patients Type: Mult / NS Cont: Mult / NS	Care: Psychosocial support / distress management HI: Mult / NS Tech: Email / secure messaging, eHealth	MA: Yes Comp: Yes: Usual Care Type: Systematic QA: Yes MA Out: telehealth interventions produced superior effects relative to control on depression and fatigue, but not distress or quality of life	No
Warrington (2019) Inc: 2000 - 2017 N: 77 Search: Cancer + self-assessment + telehealth	Purpose: Describe existing electronic symptom reporting systems and explore which features may be associated with patient engagement and outcomes Conclusion: Comparison across studies is difficult due to diversity of assessments used, although there is some evidence to suggest a positive effect of these systems	Ind: Patients Type: Mult / NS Cont: Treatment / symptom management	Care: Disease detection or management HI: Mult / NS Tech: Email / secure messaging, eHealth, Mobile application	MA: No Comp: No Type: Systematic QA: Yes	Yes (feasibility, fidelity)
Wijeratne (2021) Inc: 2015 - 2020 N: 18 Search: Cancer + self-management + text messaging	Purpose: Describe the use of text-based communications to deliver supportive care in cancer Conclusion: The majority of studies were rated as having a high level of bias and evidence was heterogeneous, but generally interventions were feasible and improved patient satisfaction without detrimental effects on symptoms or quality of life	Ind: Patients Type: Mult / NS Cont: Mult / NS	Care: Mult / NS HI: Mult / NS Tech: Text messaging / SMS	MA: No Comp: No Type: Systematic QA: Yes	Yes (acceptability, feasibility, fidelity)
Xu (2019) Inc: earliest available - 2019 N: 15 Search: Cancer + self-management + fatigue / self-efficacy / quality of life + telehealth	Purpose: Evaluate the effect of eHealth self-management interventions on cancer-related fatigue, self-efficacy, and quality of life among adult cancer patients Conclusion: eHealth self-management interventions were effective for improving cancer-related fatigue and self-efficacy, but not for quality of life.	Ind: Patients Type: Mult / NS Cont: Treatment / symptom management, Survivorship	Care: Mult / NS HI: Mult / NS Tech: Synchronous telehealth, eHealth, Mobile application	MA: Yes Comp: Yes: Usual Care Type: Systematic QA: Yes MA Out: telehealth interventions produced superior effects on fatigue and self-efficacy, but not quality of life, relative to usual care / wait list control	No

Yajima (2021) Inc: 2007 - 2019 N: 9 Search: Hematologic cancer + quality of life + telehealth	Purpose: Evaluate the utility of telehealth interventions for identifying and monitoring treatment-related symptoms in adult patients with hematologic cancer Conclusion: Telehealth interventions positively impact hematologic cancer patients' health and are acceptable and feasible	Ind: Patients Type: Hematologic Cont: Treatment / symptom management	Care: Mult / NS HI: Mult / NS Tech: Synchronous telehealth, eHealth, Mobile application	MA: No Comp: No Type: Not specified QA: No*	Yes (acceptability, feasibility)
Zhang, D (2020) Inc: earliest available - 2019 N: 8 Search: Cervical cancer + screening + mobile health	Purpose: Describe published literature on the impact of mHealth on cervical cancer screening and related health behaviors Conclusion: Mobile technologies, particularly telephone reminders or messages, can increase Pap test uptake; evidence was equivocal regarding impact on cervical cancer knowledge	Ind: Patients Type: Gynecologic Cont: Screening / diagnosis	Care: Health behavior change HI: Mult / NS Tech: Synchronous telehealth, Text messaging / SMS	MA: No Comp: No Type: Systematic QA: Yes	No
Zhang, H (2022) Inc: earliest available - 2020 N: 8 Search: Breast cancer + virtual reality	Purpose: Evaluate the effectiveness on virtual reality interventions on symptoms and rehabilitation management among breast cancer patients Conclusion: Quality of evidence from studies was low, although available evidence suggested a positive impact of virtual reality interventions on symptoms and rehabilitation of breast cancer patients	Ind: Patients Type: Breast Cont: Treatment / symptom monitoring	Care: Psychosocial support / distress management HI: Mult / NS Tech: Other (Virtual reality)	MA: Yes Comp: No Type: Systematic QA: Yes MA Out: Virtual reality interventions showed positive impacts on anxiety and abduction of upper limbs, but not on fatigue	No

Zhang, Q (2018) Inc: earliest available - 2015 N: 14 Search: Breast cancer + set of psychological and physical symptoms associated with cancer + telephone-based interventions	Purpose: Evaluate the effect of telephone-based interventions on prognostic outcomes and health-related quality of life in breast cancer patients and survivors Conclusion: Telephone-based interventions provided modest effects for anxiety, social function, and health-related quality of life, with stronger effects for self-efficiency, but no effects on depression, fatigue, or physical function	Ind: Patients Type: Breast Cont: Treatment / symptom management, Survivorship	Care: Mult / NS HI: Mult / NS Tech: Synchronous telehealth	MA: Yes Comp: Yes: Usual care Type: Systematic QA: Yes MA Out: telehealth interventions produce superior effects on quality of life and social-domestic function, self-efficacy, and anxiety, but not physiological function, depression, or fatigue, relative to control	No
Zheng (2020) Inc: earliest available - 2019 N: 13 Search: Cancer + pain + mHealth	Purpose: Evaluate the evidence on the use of mobile apps for the management of cancer pain Conclusion: Apps including instant messaging modules were associated with reduced pain	Ind: Patients Type: Mult / NS Cont: Mult / NS	Care: Mult / NS HI: Mult / NS Tech: Mobile application	MA: Yes Comp: No* (meta-analysis only of included RCTs with any control) Type: Systematic QA: Yes MA Out: Apps showed positive impacts on pain scores	Yes (acceptability, feasibility)

Notes: Review information includes primary author surname, year review published, Inc = inclusive years of included studies (where not listed, year of publishing utilized), N = number of included studies, and Search = concepts for search strategies; Population includes Ind = targeted individual, Type = cancer type, and Cont = phase of the cancer care continuum; Intervention includes targeted Care = type of intervention or care provided, HI = human involvement, and Tech = technology modality; Study design includes MA= whether a review included a meta-analysis (and if so, MA Out = meta-analytic outcome), Comp = required a comparator for study inclusion, Type = type of review, and QA = if includes a methodological quality or bias assessment (*not required for non-systematic reviews); Implementation outcomes includes whether (and if so, which) implementation outcomes were extracted and reported from studies; Mult / NS = Multiple or Not Specified. Data also available in Sortable Tables available through Open Science Framework: https://osf.io/k47hb