Supplemental Material

PRISMA checklist for abstract.

Section and Topic	Item #	Checklist item	Reported (Yes/No)
TITLE			
Title	1	Identify the report as a systematic review.	Page 1
BACKGROUND			
Objectives	2	Provide an explicit statement of the main objective(s) or question(s) the review addresses.	Page 2
METHODS			
Eligibility criteria	3	Specify the inclusion and exclusion criteria for the review.	Page 2
Information sources	4	Specify the information sources (e.g. databases, registers) used to identify studies and the date when each was last searched.	Page 2
Risk of bias	5	Specify the methods used to assess risk of bias in the included studies.	Page 2
Synthesis of results	6	Specify the methods used to present and synthesise results.	Page 2
RESULTS			
Included studies	7	Give the total number of included studies and participants and summarise relevant characteristics of studies.	Page 2
Synthesis of results	8	Present results for main outcomes, preferably indicating the number of included studies and participants for each. If meta-analysis was done, report the summary estimate and confidence/credible interval. If comparing groups, indicate the direction of the effect (i.e. which group is favoured).	Page 2
DISCUSSION			
Limitations of evidence	9	Provide a brief summary of the limitations of the evidence included in the review (e.g. study risk of bias, inconsistency and imprecision).	Page 2
Interpretation	10	Provide a general interpretation of the results and important implications.	Page 2
OTHER			
Funding	11	Specify the primary source of funding for the review.	Page 1
Registration	12	Provide the register name and registration number.	Page 1

PRISMA checklist for manuscripts.

Section and Topic	Item #	Checklist item	Location where item is reported
TITLE			
Title	1	Identify the report as a systematic review.	Page 1
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	Page 2
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	Page 4
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	Page 4
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	Page 5-6
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	Page 5-6
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	Page 5-6
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	Page 5-6
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	Page 5-6
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	Page 5-6
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	Page 5-6
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	Page 5-6
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	Page 5-6
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	Page 5-6
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	Page 5-6
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	Page 5-6
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	Page 5-6
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	Page 5-6
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	Page 5-6

Section and Topic	Item #	Checklist item	Location where item is reported
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	Page 5-6
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	Page 5-6
RESULTS			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	Page 6-9
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	Page 6-9
Study characteristics	17	Cite each included study and present its characteristics.	Page 6-9
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	Page 6-9
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	Page 6-9
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	Page 6-9
	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	Page 6-9
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	Page 6-9
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	Page 6-9
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	Page 6-9
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	Page 6-9
DISCUSSION			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	Page 9-12
	23b	Discuss any limitations of the evidence included in the review.	Page 9-12
	23c	Discuss any limitations of the review processes used.	Page 9-12
	23d	Discuss implications of the results for practice, policy, and future research.	Page 9-12
OTHER INFORMATION			
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	Page 1
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	Page 1
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	Page 1
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	Page 1
Competing interests	26	Declare any competing interests of review authors.	Page 1

Section and Topic	Item #	Checklist item	Location where item is reported
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	Page 1

Table S1. Search Strategy Details for Medline and Embase.

Database	Search Strategy
Ovid-Medline	1 cardiomyopathies/ or heart failure/ or ventricular dysfunction, left/ 184817 2 Telemedicine/ 33888 3 Fitness Trackers/ 1020 4 Medical Informatics/ 12798 5 electronic mail/ or radio/ or telemedicine/ or telemetry/ or telephone/ or television/ or videoconferencing/ or wireless technology/ 77859 6 monitoring, ambulatory/ or blood pressure monitoring, ambulatory/ or electrocardiography, ambulatory/ 30884 7 telemetry/ or remote sensing technology/ 13745 8 clinical study/ or clinical trial/ or controlled clinical trial/ or randomized controlled trial/ 918475 9 ((heart* or cardi* or myocardi* or ventric*) adj2 (decompensat* or fail* or incompeten* or insuffici* or dysfunc*)).mp. 283661 10 (CHF* or HF* or cardiomyopath*).mp. 199955 11 (tele-monitor* or telemonitor* or telemed* or tele-med* or teleinterpret* or tele-interpret* or telecomm* or tele-comm* or telemetry* or mhealth* or m-health* or ehealth* or e-health* or telehealth* or tele-health*).mp. 65198 12 (mobile adj2 (health* or technolog* or app* or solution* or phone* or communicat*)).mp. 28577 13 (remote* adj2 (transmi* or transfer* or tele* or monitor* or consult* or follow-up* or program* or connect* or web-base* or "web base*" or term*)).mp. 11672 14 (monitor* adj2 (home or remote or distan* or ambulatory or tele* or online or on-line or "on line" or phone or digital* or Skype* or electronic* or implant* or wireless* or web-base* or "web base*")).mp. 39059 15 (interven* adj2 (remote* or distan* or tele* or online* or on-line or "on line" or phone* or digital* or Skype* or electronic* or wireless*)).mp. 6445 16 (smartphone* or "smart phone*" or bluetooth* or Internet* or phone* or text messag*).mp. 171274 17 ((app* or apps* or application*) adj2 (mobile* or electronic* or software*)).mp. 19789 18 ((digital* or electronic* or online* or on-line* or "on line" or Internet) adj3 (health* or solution* or transmit* or transmiss* or transfer* or device* or connect*)).mp. 68445 19 (self monitor* or self-monitor*).mp. 14839 20 (random* adj2 (trial* or study)).mp. 847682 21 (clinic* adj2 (trial* or study)).mp. 1159249 22 (RCT* or trial*).mp. 1780652 23 (control* adj2 (trial* or study)).mp. 1038264 24 1 or 9 or 10 413705 25 2 or 3 or 4 or 5 or 6 or 7 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 386132 26 8 or 20 or 21 or 22 or 23 1983052 27 24 and 25 and 26 1904 28 limit 27 to english language 1781 29 limit 28 to humans 1766 30 limit 29 to yr="2000 -Current" 1555
Ovid-Embase	1 exp heart failure/ 534186 2 ((heart* or Cardi* or Myocardi* or ventric*) adj2 (decompensat* or fail* or incompeten* or insuffici* or dysfunc*)).mp. 505736 3 (CHF* or HF*).mp. 199766 4 exp cardiomyopathy/ 142561 5 cardiomyopath*.mp. 156783 6 exp heart ventricle function/ 69698 7 exp telemedicine/ 59966

	8 exp wearable computer/ 6468 9 exp mobile application/ 20340 10 exp mobile phone/ 39911 11 exp medical informatics/ 21407 12 exp telecommunication/ 96843 13 exp ambulatory monitoring/ 9822 14 exp telemetry/ 31949 15 (tele-monitor* or telemonitor* or telemed* or tele-med* or teleinterpret* or tele-interpret* or telecomm* or tele-comm* or telemetry*).mp. 93698 16 (mhealth* or m-health* or ehealth* or e-health* or telehealth* or tele-health*).mp. 33636 17 (mobile adj2 (health* or technolog* or app* or solution* or phone* or communicat*)).mp. 52238 18 (remote* adj2 (transmi* or transfer* or tele* or monitor* or consult* or follow-up* or program* or connect* or web-base* or "web base*" or term*)).mp. 12911 19 (monitor* adj2 (home or remote or distan* or ambulatory or tele* or online or on-line or "on line" or phone or digital* or Skype* or electronic* or implant* or wireless* or web-base* or "web base*")).mp. 58931 20 (interven* adj2 (remote* or distan* or tele* or online* or on-line or "on line" or phone* or digital* or Skype* or electronic* or wireless*)).mp. 10348 21 (smartphone* or "smart phone*" or bluetooth* or Internet* or phone* or text messag*).mp. 259236 22 ((app* or apps* or application*) adj2 (mobile* or electronic* or software*)).mp. 36956 23 ((digital* or electronic* or online* or on-line* or "on line" or Internet) adj3 (health* or solution* or transmit* or transmiss* or transfer* or device* or connect*)).mp. 100360 24 (self monitor* or self-monitor*).mp. 15032 25 exp clinical trial/ 1563701 26 exp "randomized controlled trial (topic)"/ 228392 27 (random* adj2 (trial* or study)).mp. 1096483 28 (clinic* adj2 (trial* or study)).mp. 5163056 29 RCT*.mp. 99289 30 trial*.mp.2571639 31 (control* adj2 (trial* or study)).mp. 8775169 32 1 or 2 or 3 or 4 or 5 or 6 850451 33 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 557593 34 25 or 26 or 27 or 28 or 29 or 30 or 31 11303575 35 32 and 33 and 34 9291