

TITLE: Efficacy of interventions to increase physical activity for people with heart failure: a meta-analysis

Supplement 1. Search strategy

A. Search Strategy (Interface - EBSCOhost Research Databases):

OR/1-22: (MM "Heart Failure+"), "heart failure", (MM "Cardiac Output, Decreased"), (MM "Ventricular Dysfunction+"), heart N5 fail*, cardi* N4 dysfunction*, heart N5 dysfunction*, "congestive heart failure", "cardiac fail*", "systolic heart failure", "cardiac incompetence", "cardiac decompensation", "cardiac insufficiency", "chronic heart failure", "cardial insufficiency", "myocardial failure", "myocardial insufficiency", "heart N3 fail*", "diastolic dysfunction*", "Systolic dysfunction*", "heart N3 dysfunction*", "cardiac dysfunction*".

OR/24-46: (MH "Behavioral Changes"), (MH "Life Style Changes") , (MM "Self Care+") , "Self-management", "Intervention", (MM "Early Intervention+") , (MM "Patient Care+") , (MM, "Rehabilitation+"), (MM "Home Rehabilitation+") , (MM "Rehabilitation, Cardiac+") , (MM "Rehabilitation, Community-Based"), (MH "Physical Education, Adapted"), (MH "Behavioral Objectives"), (MH "Psychosocial Adjustment: Life Change (Iowa NOC), (MH "Change Management") , (MH "Behavior Management (Iowa NIC)", (MH "Health Behavior") , (MH "Psychotherapy+", "Behavioral intervention", "Behavioral change technique*", "Behavioral change", "Counselling", "Psychotherapy".

OR/48-62: (MH "Physical Activity"), (MH "Sports+"), (MH "Activities of Daily Living+"), (MH "Exercise+"), (MH "Leisure Activities+"), (MH "Physical Fitness+"), (MH "Movement"), (MH "Aerobic Exercise+"), (MH "Swimming"), (MH "Rehabilitation, Cardiac"), (MH "Resistance training"), (MH "Sports Specific Training"), (MH "Group Exercise"), Physical N5 activ*, Exercis*.

OR/64-66: (MH "Randomized Controlled Trials"), "Randomized controlled trial", "Clinical trial".

23 AND 47 AND 63

23 AND 47 AND 63 AND 67

B. Search Strategy (Interface - OVID):

1. exp heart failure/
2. heart failure.mp.
3. heart decompensation.mp.
4. heart insufficiency.mp.
5. cardiac failure.mp.
6. cardiac incompetence.mp.
7. cardiac decompensation.mp.
8. cardiac insufficiency.mp.
9. exp heart output/
10. cardiac output.mp.
11. exp diastolic dysfunction/
12. exp congestive heart failure/
13. diastolic dysfunction.mp.
14. exp systolic dysfunction/
15. exp heart left ventricle failure/
16. heart left ventricle failure.mp.
17. cardiac insufficiency.mp.
18. chronic heart failure.mp.
19. chronic heart insufficiency.mp.
20. decompensation,heart.mp.
21. myocardial failure.mp.
22. myocardial insufficiency.mp.
23. (heart adj3 fail*).tw.
24. (heart adj3 dysfunction*).tw.
25. left ventricular dysfunction.tw.
26. (cardiac adj3 dysfunction*).tw.
27. (cardiac adj3 fail).tw.
28. ventricular dysfunction.mp.
29. chronic cardiac failure.mp.
30. congestive cardiac failure.mp.
31. 1 or 2 or 3 or 4 or 5 or 6 or 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 or 25 or 26 or 27 or 28 or 29 or 30

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32. exp physical activity/
33. physical exercise.mp.
34. physical activity.mp.
35. exercise.mp.
36. exp aerobic exercise/
37. aerobic exercise.mp.
38. exp resistance training/
39. resistance training.mp.
40. exercise training.mp.
41. exp daily life activity/
42. exp walking/
43. exp motor activity/
44. daily physical activity.mp.
45. exp motor activity/
46. exp leisure/
47. leisure activities.mp.
48. exp heart rehabilitation/
49. cardiac rehabilitation.mp.
50. exercise program.mp.
51. exercise programme.mp.
52. exp fitness/
53. exp swimming/
54. exp sport/
55. exp endurance training/
56. (physic* adj3 activ*).tw.
57. physical activity.tw.
58. exercis*.tw.
59. walk*.tw.
60. (daily adj5 physic adj5 activ*).tw.
61. 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60
62. 31 and 61
63. exp intervention study/
64. intervention.mp.
65. exp health promotion/
66. exp behavior change/
67. behavioral intervention.mp.
68. behaviour change.mp.
69. exp behavior change/
70. psychological intervention.mp.
71. exp patient education/
72. exp counseling/
73. exp patient counseling/
74. behav* change.tw.
75. (change adj3 behavio\$r).tw.
76. intervention.tw.
77. health promotion.tw.
78. behavio\$r change technique*.tw.
79. behavio\$r change strateg*.tw.
80. BCT.tw.
81. randomized controlled trial.tw.
82. randomized controlled trial/
83. clinical trial/
84. controlled study/
85. RCT.mp.
86. 81 or 82 or 83 or 84 or 85
87. cardiac rehabilitation.tw.
88. 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 or 80 or 87
89. 31 and 61 and 86 and 88

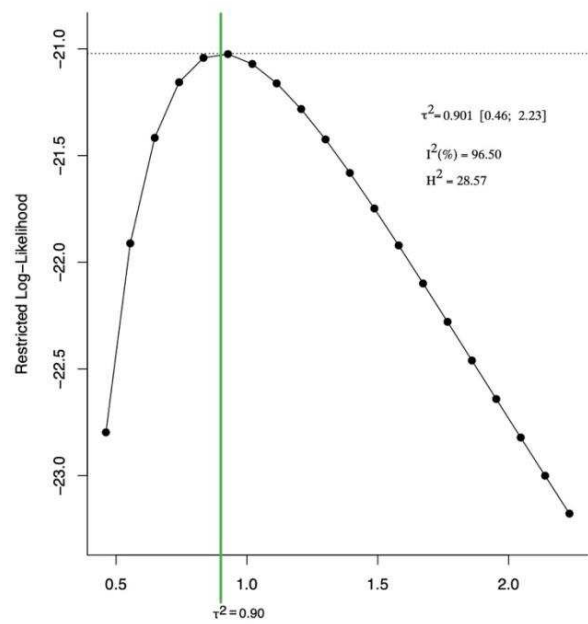
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Supplement 2. Risk of bias: individual studies

Study ID	Experimental	Comparator	Randomization process	Deviations from intended interventi	Missing outcome data	Measurement of the outcome	Selection of the reported result	Overall	
Ajiboye et al. 2015	Aerobic and reistnace and education traning	Education	+	?	+	-	?	-	Low risk
Bernocchi et al. 2018	Telerehabilitation with personalised exercise	Usual care	+	?	+	+	+	+	Some concerns
Boyne et al. 2015	Individually tailored e-health intervention	Education	+	?	+	+	?	!	High risk
Brodie et al. 2005	Motivational interviewing and education	Education	+	?	+	+	+	+	
Brodie et al. 2005	Motivational interviewing	Education	+	?	+	+	+	+	
Collins et al. 2004	Aerobic exercise training	Usual care	?	?	+	+	?	!	
Corvera-Tindel et al. 2004	Aerobic exercise training	Usual care	?	+	+	+	+	!	
Cowie et al. 2013	Home-based exercise training	Usual care	?	?	+	+	+	!	
Cowie et al. 2013	Hospital-based exercise training	Usual care	?	?	+	+	+	!	
Dalal et al. 2018	The rehabilitaiton enablement in chronic heart failure	Usual care	+	+	+	+	+	+	
Freedland et al. 2015	Cognitive Behavioural Therapy	Education	+	+	+	+	+	+	
Jolly et al. 2009	Aerobic and resistance exercise care	Usual care	+	?	+	?	?	!	
Meng et al. 2016	Self-management patient education program	Education	?	+	?	?	+	!	
O'Connor et al. 2009	Aerobic exercise training exercise adherence intervention	Usual care	+	+	+	+	+	+	
Pozehl et al. 2018	Multicomponent intervention with exercise	Usual care	?	?	+	?	+	!	
Smeulders et al. 2009	Chronic disease managment	Usual care	+	+	+	+	+	+	
Tomita et al. 2008	Multidisciplinary internet program	Usual care	+	?	?	-	?	-	
Van den Berg-Emons et al. 2004	Aerobic exercise training	Usual care	+	?	+	+	?	!	
Wellenheimer et al. 1998	Aerobic exercise training	Discouragement to exercise	+	?	+	?	?	!	
Witham et al. 2005	Seated aerobic exercise	Usual care	+	+	+	+	?	!	
Yeh et al. 2004	Tai-Chi mind body exercise	Usual care	+	+	+	+	?	!	
Young et al. 2015	Patient activation programme on self-management	Usual care	+	?	+	+	+	!	

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Supplement 3. The dispersion of the underlying main effect



The dispersion (tau) of the underlying main effect.

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Supplement 4. Intervention characteristics (expanded Table 2)

Author, year		Intervention description	Behaviour Change Techniques	Intervention intensity	Facilitator	mode of delivery	Theory (TCS)
Ajiboye et al., 2015	<i>Main intervention</i>	Aerobic and resistance training and education	BP/R; GT	36 session; 60-minute sessions; three a week (36 sessions)	nr	face-to-face	none
	<i>Comparator treatment</i>	usual care and education	PI				
Bernocchi et al., 2018	<i>Main intervention</i>	integrated telerehabilitation home-based programme (Telereab- HBP) with personalised exercise maintenance programme	IHC; CS: IHPB; AOE; BP/R; GT; SMB; MbBOwF; FB;	nr	Nurse tutor; physiotherapist tutor	telemonitoring of vital signs. Mini-ergometer, pedometer and diary.	none
	<i>Comparator treatment</i>	usual care	IHC				
van den Berg-Emons et al., 2004	<i>Main intervention</i>	aerobic exercise training	AP; BP/R; GS(B);	24 sessions, 60-minute sessions twice a week (12 weeks)	not reported	hospital-based training in groups	none
	<i>Comparator treatment</i>	usual care without particular advice for exercise	none	not reported	not reported	not reported	none

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Author, year		Intervention description	Behaviour Change Techniques	Intervention intensity	Facilitator	mode of delivery	Theory (TCS)
Boyne et al., 2014	<i>Main intervention</i>	Individually tailored e-health intervention 'Health Buddy.'	IHC; SMB; SMOB	364 sessions: daily 10-minute session (52 weeks)	HF nurse and a nurse assistant	Telemonitoring device 'Health Buddy.'	none
	<i>Comparator treatment</i>	education	IHC	not reported	not reported	Home-based, individual	none
Brodie et al., 2005	<i>Main intervention</i>	Motivational Interviewing	GT; IHC; PS; SC; SMB; SS(E); SS(U);	Eight sessions: Weekly 60- minute sessions (8 weeks)	A researcher without clinical qualification	home-based Face-to-face sessions	MI (TCS = 2)
	<i>Main intervention</i>	Motivational interviewing + education	GT; PS; SC; SMB; SS(E); SS(U)	Eight sessions: Weekly 60- minute sessions (8 weeks)	HF specialist nurse; researcher without clinical qualification	home-based Face-to-face sessions + Usual care package	MI (TCS = 2)
	<i>Comparator treatment</i>	education	IHC	not reported	HF specialist nurse	Usual care package	none
Collins et al., 2004	<i>Main intervention</i>	Aerobic exercise training	AOE; AP; BP/R; GS(B); GT; IHPB; RP/C	120 sessions five days a week 50 minutes (24 weeks)	Exercise physiologist or nurse	Supervised group-based	none

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	<i>Comparator treatment</i>	usual care	none	not reported	not reported	not reported	none
Corvera-Tindel et al., 2004	<i>Main intervention</i>	A home walking exercise programme	BP/R; GS(B); GT; MBbOwF; MOBwF; SMB	60 sessions: 60 minutes 5 days a week (12 weeks)	nurse	Home-based, Supervised	none
	<i>Comparator treatment</i>	usual care	MBbOwF	not reported	not reported	not reported	none
Cowie et al., 2011	<i>Main intervention</i>	hospital-based aerobic exercise training	Intervention 1: AP; BP/R; DB; GS(B); GT; IHC; IHPB; RBG; SMB; SMOB;	16 sessions: 60 minutes sessions, Twice a week eight weeks	Exercise instructor	Face-to-face, hospital-based	none
	<i>Main intervention</i>	home-based exercise training	Intervention 2: AP; BP/R ; DB; GS(B); GT; GTB: IHC; IHPB: SMOB;	16 sessions: 30 minutes sessions, Twice a week eight weeks	physiotherapist	home-based, individual (DVD)	none
	<i>Comparator treatment</i>	usual care	none	not reported	not reported	not reported	none

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Author, year		Intervention description	Behaviour Change Techniques	Intervention intensity	Facilitator	mode of delivery	Theory (TCS)
Dalal et al., 2018 (REACH-HF)	<i>Main intervention</i>	the Rehabilitation Enablement in Chronic Heart Failure (REACH-HF) self-care and rehabilitation intervention	BP/R; RNE; RPE; IHC; SS(E); SS(P); SS(U); GT; GS; PS; RBG; SMB	at least three face-to-face sessions; via phone - unspecified; 12 weeks	Two trained cardiac nurses	nr	SDT, CSM, CT (TCS = 5)
	<i>Comparator treatment</i>	usual care	IHC				
Freedland et al., 2018	<i>main intervention</i>	Integrative Cognitive Behaviour Therapy + Enhanced (with education) usual care	IHC; GS(B); AP; CS; IHPB; PS; MBOwF; MOBwF; ST; PC;	25 sessions; 60-minute sessions; once a week; 4 education sessions via phone (30 minutes)	Clinical psychology trainee (graduate student)	nr	CBT (TCS = 6)
	<i>Comparator treatment</i>	Enhanced (with education) usual care	IHC	Four education sessions via phone (30 minutes)	Nurse	nr	none
O'Connor et al., 2009 (HF-ACTION)	<i>Main intervention</i>	Aerobic exercise training + Exercise adherence facilitation intervention	AOE; AP; BP/R; CS; GS(B); GT; GTB; IHC; IHPB; PC; SMB; SMOB; SS(E); MBbOwF; SS(P); SS(U)	72 sessions, three sessions per week (24 weeks)	Physiotherapist	Facility-based group-based exercise training	TTM, SCT (TCS = 7)
	<i>Comparator treatment</i>	usual care	CS; GS(B); IHC; MBbOwF; SS(U);	not reported	not reported	not reported	none

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Author, year		Intervention description	Behaviour Change Techniques	Intervention intensity	Facilitator	mode of delivery	Theory (TCS)
Jolly et al., 2009	<i>Main intervention</i>	Aerobic and resistance exercise training	AP; BC; BP/R; DB; GS(B); GT; IHC; IHPB SMB; SS(U)	Three supervised exercise sessions; 3 home visits; 3 telephone sessions; 120 self-applied sessions (5 times a week) 20-30 minutes (24 weeks)	PA instructor	Home-based, face-to-face	none
	<i>Comparator treatment</i>	HF specialist nurse care	IHC	not reported	HF specialist nurse	not reported	none
Meng et al., 2016	<i>Main intervention</i>	self-management patient education program + inpatient cardiac rehabilitation	IHC; GS(B); AP; PS; RBG; SMB; FPS; IHPB; BF	Five sessions; 60-75 minutes; 2 sessions a week (approx), three-week session;	Physician; nurse; psychologist; physiotherapist	face-to-face	nr
	<i>Comparator treatment</i>	education	IHC	One session; 60 minutes	physician	face-to-face	
Pozehl et al., 2018 (HEART Camp)	<i>Main intervention</i>	multicomponent intervention Heart Failure Exercise and Resistance Training (Heart Camp)	IHTB; BP/R; BF; IEC; iHC; MOBwF; SS(U); GS(B); RBG; PS; VPAC; FB; BF; SMB	Six group-based educational sessions (adoption: 6 and months), self-administered (maintenance at 13-18 months) one session a week (18 months)	coach trainer	nr	SCT (TCS = 5)

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Author, year		Intervention description	Behaviour Change Techniques	Intervention intensity	Facilitator	mode of delivery	Theory (TCS)
	<i>Comparator treatment</i>	Enhanced (nine exercise sessions for three months)	IHPB; BP/R	nr	nr	face-to-face	none
Smeulders et al., 2009	<i>Main intervention</i>	Chronic disease management programme	AP; BC; BE; BP/R; D; DB; FB; IHC; ISRM; PS; R; RNE; SS(U); ST	Six sessions 150 minutes once a week (6 weeks)	Lay leader (HF patient); HF specialist nurse	Hospital-based group-based exercise training and classes	SLT (TCS = 8)
	<i>Comparator treatment</i>	usual care	none	not reported	HF specialist nurse	not reported	none
Tomita et al., 2008	<i>Main intervention</i>	Multidisciplinary Internet-based programme on management of HF	FB; IHC; IHPB; SMB	Forty-two sessions, 3.5 sessions a month for about 10 minutes. 1-year e-health intervention	Self-applied (Website)	Home-based, internet-based (website)	TTM, SST (TCS = 2)
	<i>Comparator treatment</i>	Usual care	none	not reported	not reported	not reported	
Willenheimer et al., 2001	<i>Main intervention</i>	Aerobic exercise training	AP; BP/R; DB; GS(B); GT; IHPB	41 session: 2 sessions a week (15 minutes) for seven weeks: and then three sessions a week (45 minutes) for nine weeks	physiotherapist	Hospital-based, Group-based exercise training	none

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Author, year		Intervention description	Behaviour Change Techniques	Intervention intensity	Facilitator	mode of delivery	Theory (TCS)
	<i>Comparator treatment</i>	usual care + discouragement to exercise	PI	16 weeks	nr	not reported	none
Witham et al., 2005	<i>Main intervention</i>	Seated aerobic exercise training followed by seated resistance exercise training	BP/R; GS(B); GT; GTB; IHC; MOBwF; SMB; SS(U)	17-20 sessions 20-minute session Twice a week (12 weeks)	Physiotherapist	Group-based, hospital-based exercise training (supervised and home settings) Followed by home self-monitoring, self-monitoring and goal setting.	none
	<i>Comparator treatment</i>	usual care	IHC	nr	nr	not reported	none
Yeh et al., 2011	<i>Main intervention</i>	Exercise training (Tai Chi Mind-Body movement)	AP; BC; BP/R; DB; GS(B); IHPB; SMB	twice a week (group sessions); three times a week home sessions) one hour (group sessions); 35 minutes (home sessions) (12 weeks)	Exercise instructor	Hospital-based, Group-based exercise training	none

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Author, year		Intervention description	Behaviour Change Techniques	Intervention intensity	Facilitator	mode of delivery	Theory (TCS)
	<i>Comparator treatment</i>	usual care	none	Not reported	Video recording	Followed by home-based exercise training and monitoring	none
Young et al. 2015; 2016	<i>Main intervention</i>	Patient Activation Intervention on self-management in HF (Patient AcTivated Care at Home: PATCH)	IHC; DB; IHPB; SMOB; ;GS(B); IAwCB; SC; VC; MBbOwF; NSI	12 sessions (45 minutes); one in a hospital and then twice a week for the first two weeks, once a week for weeks 3–6, and every other week for weeks 7–12 (12 weeks)	Advanced practice nurse	one session face-to-face; telephone	none
	<i>Comparator treatment</i>	Usual care	IHC	50-minute one session	nurse	face-to-face	none

Note: TCS – Theory Coding Scheme; nr – not reported; MI – Motivational Interviewing, SDT – Self-determination theory; CSM -- CT—Control Theory; CBT—Cognitive Behavioural Therapy; TTM – Transtheoretical Model of Change; SCT—Social Cognitive Theory; SLT – Social Learning theory; SST; AOE – 12.5. Adding objects to the environment; AP – 1.4. Action planning; BC –12.6. Body changes; BE – 4.4. Behavioural experiments: BP/R – 8.1. Behavioural practice/rehearsal; BF - Biofeedback; CS – 9.2. Credible source; D – 12.4. Distraction; DB – 6.1. Demonstration of the behaviour; FB – 2.2. Feedback on behaviour; FPS - 15.3. Focus on past success; GS(B) – 1.1. Goal setting (behaviour); GT – 8.7. Graded tasks; GTB – 8.6. Generalisation of target behaviour; IEC - 5.6. Information about emotional consequences; IHC – 5.1 Information about health consequences; IHPB – 4.1. Instruction on how to perform the behaviour; IAwCB – 13.5. Identity associated with changed behaviour; ISRM – 13.1. Identification of self as a role model; MBbOwF - 2.5. Monitoring of behaviour by others without feedback; MOBwF – 2.5. Monitoring of outcomes of behaviour without feedback; NSI – non-specific incentive; PC – 7.1. Prompts/cues; PS – 1.2. Problem-solving; R – 4.3. Reattribution; RBG – 1.5. Review behaviour goal(s); RNE –11.2. Reduce negative emotions; RP/C – 7.3. Reduce prompts/cues; RPE - 12.1. Restructuring the physical environment; SC – 6.2. Social comparison; SMB – 2.3. Self-monitoring of behaviour; SMOB – 2.4. Self-monitoring of outcome(s) of behaviour; SS(E) – 3.3. Social support (emotional); SS(P) –3.2. Social support (practical); SS(U) – 3.1. Social support (unspecified); ST – 15.4. Self-talk; VPAC - 15.1. Verbal persuasion about capability; VC - 16.3. Vicarious consequences

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Supplement 5. Intervention and participant characteristics, as well as method of assessment that did not significantly contribute to intervention efficacy

Variable	SMD/b	CI, 95% (lower)	CI, 95% (upper)
Theory use:			
Theory use score (overall, TCS)	0.13	-0.01	0.27
Theory mentioned	0.46	-0.23	1.15
Behaviour Change Techniques:*			
Self-monitoring of behavior	0.49	-0.04	1.03
Information about health consequences	0.50	-0.05	1.06
Social support (emotional)	0.92	-0.08	1.92
Instruction on how to perform a behavior	0.51	-0.11	1.13
Social support (unspecified)	0.53	-0.19	1.25
Demonstration of the behavior	0.37	-0.39	1.12
Feedback on behavior	0.31	-0.77	1.38
Problem solving	0.05	-0.92	1.02
Monitoring outcome(s) of behavior by others without feedback	0.32	-0.92	1.56
Behavioral contract	0.30	-0.93	1.53
Biofeedback	0.50	-1.01	2.01
Review behavior goal(s)	0.18	-1.08	1.43
Reduce negative emotions	0.07	-1.17	1.30
Information about emotional consequences	0.04	-1.47	1.56
Vicarious consequences	0.23	-1.47	2.39
Self-talk	0.04	-1.48	1.55
Social comparison	0.02	-1.55	1.60
Behavioral experiments	0.21	-1.93	2.34
Distraction	0.21	-1.93	2.34
Identification of self as role model	0.21	-1.93	2.34
Reattribution	0.21	-1.93	2.34
Identity associated with changed behaviour	0.23	-1.93	2.39
Non-specific incentive	0.23	-1.93	2.39
Restructuring the physical environment	0.13	-2.01	2.27
Reduce prompts/cues	0.04	-2.22	2.31
Social support (practical)	1.42	-2.22	2.46
Discrepancy between current behavior and goal	-0.14	-2.28	2.01

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Intervention intensity:			
Number of sessions	0.00	-0.01	0.01
Duration, single session (mins)	0.00	0.00	0.01
Intervention contact time (mins)	0.00	0.00	0.00
intervention duration (weeks)	-0.01	-0.04	0.02
Individually delivered	0.30	-0.47	1.06
Setting:			
Home-setting	0.16	-0.66	0.99
Facilitator:			
Telehealth	0.73	-0.79	2.25
Nurse	0.34	-0.38	1.05
HF nurse	0.09	-1.18	1.36
Researcher	0.29	-1.25	1.82
Self-applied	0.21	-1.35	1.76
Lay leader	0.21	-1.93	2.34
Advanced practice nurse	0.23	-1.93	2.39
Cardiac nurse	0.13	-2.01	2.27
Website	0.00	-2.25	2.25
Graduate student therapist (trained)	-0.14	-2.28	2.01
Participant characteristics:			
Age	0.01	0.00	0.01
Males included in the sample, (%)	0.01	0.00	0.02
LVEF, (%)	0.01	0.00	0.02
Physical activity assessment:			
Self-reports	0.68	-0.06	1.41
Accelerometer	0.31	0.07	0.56
Difference in efficacy between trials using accelerometers vs self-reports	-0.32	-1.15	0.51

*(BCTTV1 taxonomy: Michie et al., 2013)

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Supplement 6. Sensitivity analysis: results

EXCLUDED TRIALS	Overall effect	General Approach	Efficacious intervention characteristics
Trials with the education comparator (Boyne et al. 2014; Meng et al. 2016; Freedland et al. 2015; Brodie and Inoue 2005) (Ajiboye et al. 2015)	SMD = 0.31, 95%CI [0.21; 0.40] ***	<p>Exercise: SMD = 0.34 , 95%CI [0.18; 0.51];</p> <p>Remote communication and treatment: SMD = 0.42, 95%CI [0.24; 0.60];</p> <p>Exercise and behaviour change: SMD = 0.21, 95%CI [0.004; 0.41];</p> <p>Disease Management: SMD = 0.21, 95%CI [-0.03; 0.45];</p> <p>Self-Management: SMD = 0.23, 95%CI [-0.17; 0.62].</p>	No change in the significance of the effects associated with individual intervention or participant characteristics

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EXCLUDED TRIALS	Overall effect	General Approach	Efficacious intervention characteristics
HF-ACTION trial (O'Connor et al. 2009)	SMD = 0.37, 95% CI: [0.10; 0.63]*	Exercise: SMD = 0.56, 95%CI [0.18; 0.94]; Remote communication and treatment: SMD =0.41, 95%CI [-0.29; 1.11]; MI: SMD = 0.03, 95%CI [-0.89; 0.94]; Exercise and behaviour change: SMD = 0.21, 95%CI [-0.59; 1.01]; CBT: SMD = 0.21, 95%CI [-0.91; 1.33]; Disease Management: SMD =0.23, 95%CI [-0.95; 1.41].	Behavioural Practice and Rehearsal * Graded task * Group-based * Centre-based *

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High Risk of Bias trials (Ajiboye et al. 2015; Tomita et al. 2008)	Social Support (emotional) *		
	Social Support (practical) **		
	TCS score *		
	Monitoring of behaviour by others w/o feedback*		
	Credible source***		
	Adding objects to the environment ***		
	Self-monitoring of outcome(s) of behaviour*		
	Self-monitoring of behaviour *		
	Information about health consequences *		
	Information on how to perform behaviour *		
	Graded tasks *		
	Action Planning *		
	Goal setting (behaviour) *		
	Behavioural Practice and Rehearsal**		
	SMD =	Exercise: SMD =0.36, 95%CI [-0.2; 0.91];	
	0.4578	Remote communication and treatment:	
	95%CI	SMD = 0.56, 95%CI [-0.57; 1.7];	
	[0.0903	MI: SMD = 0.03, 95%CI [-1.16; 1.21];	
	0.8252 *	Exercise and behaviour change:	
		SMD = 1.27, 95%CI [0.47; 2.07]***;	
		CBT: SMD = 0.21, 95%CI [-1.38; 1.8];	
		Disease Management: SMD =0.23, 95%CI [-1.39	
		1.85].	

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EXCLUDED TRIALS	Overall effect	General Approach	Efficacious intervention characteristics
HF-ACTION trial (O'Connor et al. 2009) and High Risk of Bias trials	SMD = 0.2670 95%CI [0.1549 0.3790 ***	Exercise: SMD=0.35, 95% CI [0.15; 0.54]*; Remote communication and treatment: SMD=0.47, 95%CI [0.24;0.70]*; MI: SMD=0.03, 95%CI [-0.46;0.52]; Exercise and behaviour change: SMD= 0.21; 95%CI:[-0.07; 0.49]; CBT SMD= 0.21, 95%CI:[-0.15; 0.57] Disease Management SMD= 0.23, 95%CI:[-0.25; 0.71].	Nurse *** Telehealth** Biological Feedback* Credible source * Self-monitoring of outcomes of behaviour* Self-monitoring of behaviour ** Demonstration of the behaviour ** Information about health consequences ** Graded tasks ** Action Planning ** Goal setting (behaviour)*** Behavioural Practice and Rehearsal***

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Supplement 7. Publication bias: funnel plot

