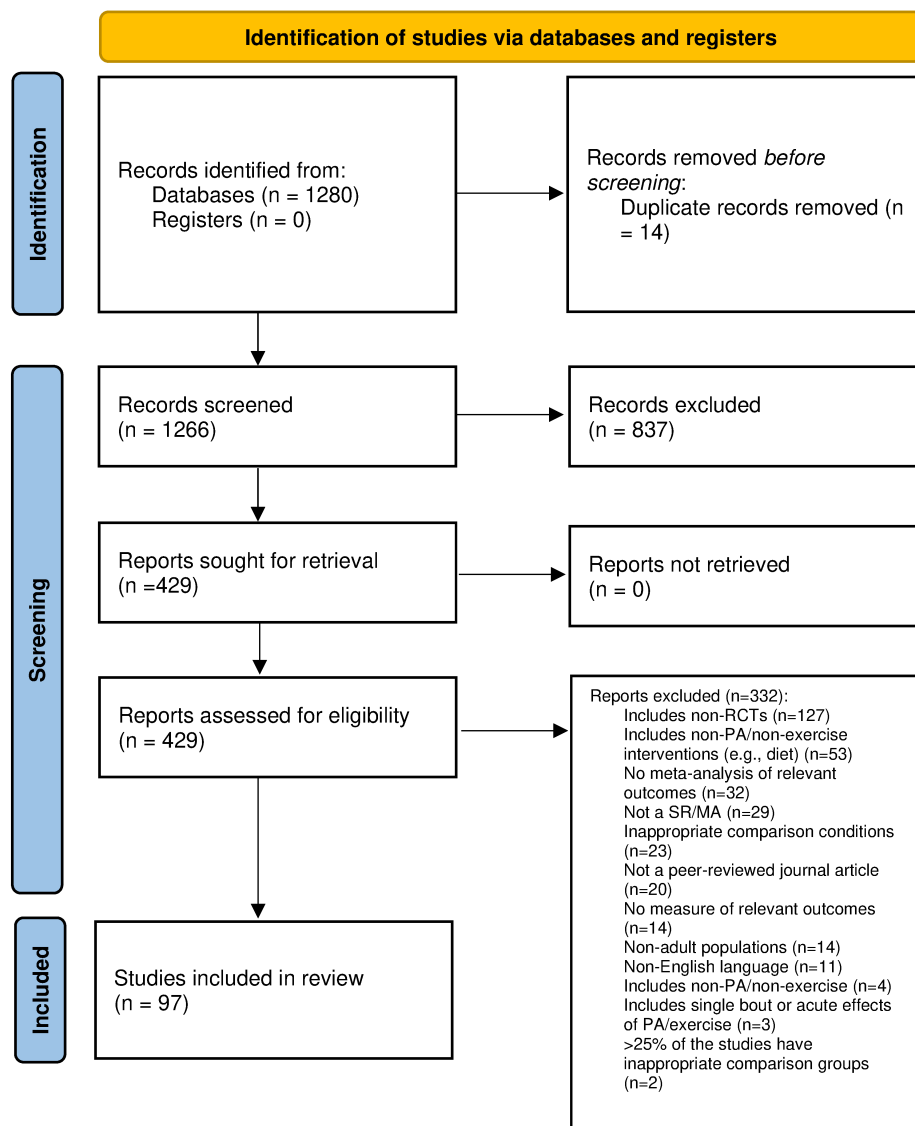


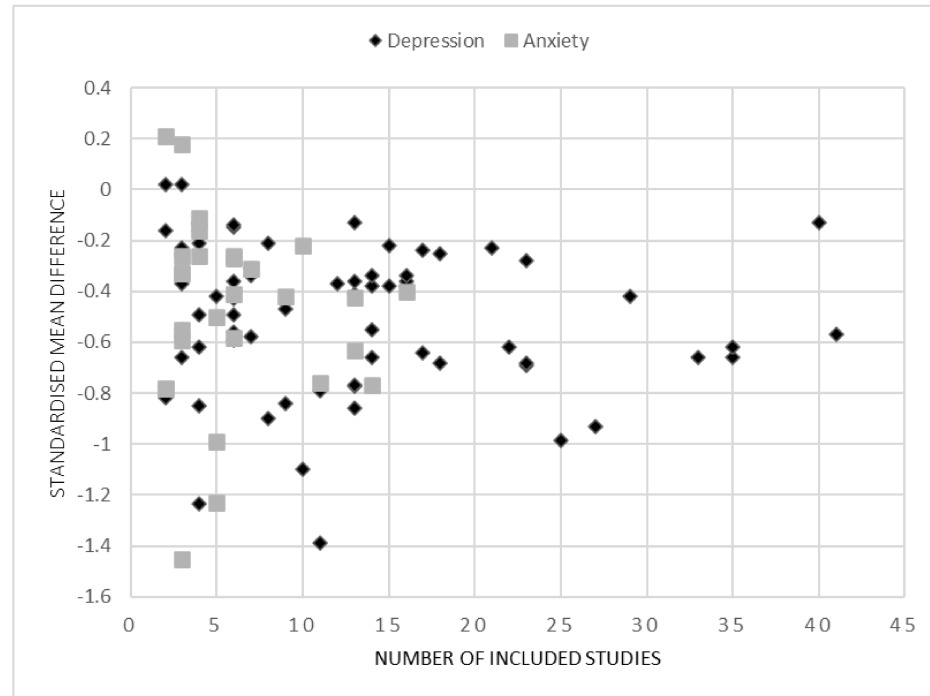
eTable 1. Medline search strategy and terms

MEDLINE(R) ALL <1946 to November 12, 2021> Ovid MEDLINE(R) ALL <1946 to November 19, 2021>	
1 Meta-Analysis as Topic/ 2 meta analy\$.tw. 3 metaanaly\$.tw. 4 Meta-Analysis/ 5 Systematic Review/ [addition] 6 Systematic Reviews as Topic/ [addition] 7 (systematic adj (review\$1 or overview\$1)).tw. 8 exp Review Literature as Topic/ 9 or/1-8 10 cochrane.ab. 11 embase.ab. 12 (psychlit or psyclit).ab. 13 (psychinfo or psycinfo).ab. 14 (cinahl or cinhal).ab. 15 science citation index.ab. 16 bids.ab. 17 cancerlit.ab. 18 or/10-17 19 reference list\$.ab. 20 bibliograph\$.ab. 21 hand-search\$.ab. 22 relevant journals.ab. 23 manual search\$.ab. 24 or/19-23 25 selection criteria.ab. 26 data extraction.ab. 27 25 or 26 28 Review/ 29 27 and 28 30 Comment/ 31 Letter/ 32 Editorial/ 33 animal/	34 human/ 35 33 not (33 and 34) 36 or/30-32,35 37 9 or 18 or 24 or 29 38 37 not 36 39 exp exercise/ 40 exp exercise therapy/ 41 exp sports/ 42 Physical Fitness/ 43 (physical* adj5 (fit* or train* or activ* or endur* or exer*)).ti,ab. 44 (exercis* adj5 (train* or physical* or activ*)).ti,ab. 45 sport*.ti,ab. 46 walk*.ti,ab. 47 swim*.ti,ab. 48 pilates.ti,ab. 49 step*.ti,ab. 50 HIIT.ti,ab. 51 (tai ji or tai chi or tai-ji or tai-chi).ti,ab. 52 (resistance adj3 train*).ti,ab. 53 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 54 38 and 53 55 depress*.ti,ab. 56 anxiety.ti,ab. 57 distress.ti,ab. 58 55 or 56 or 57 59 54 and 58 60 food.ti,ab. 61 diet*.ti,ab. 62 nutriti*.ti,ab. 63 59 not (60 or 61 or 62)

eFigure 1. PRISMA flow diagram.



eFigure 2. Funnel plot showing the relationship between systematic review-level standardised mean differences and the number of studies included in each meta-analysis for depression and anxiety.



eTable 2. Overview of all included studies.

Reference	Studies (n=)	Total sample (n=)	Population or condition; gender; age mean±SD or range (years)	Main interventions; intensity; duration (range).	Relevant outcomes (instruments)	AMSTAR category
Adamson 2015	26	1324	Neurological disorders; males and females; mean±SD and range NR	AE, RE, Yoga, Tai Chi, Qigong, gymnastics; various intensities; 4w-52w	1) Depression (BDI, BDI-II, CES-D, CESD-10, CSDD, GDS, HADS, IDS-SR, Levine-Pilowsky depression questionnaire, MADRS, MDI, POMS)	Critically low
Aylett 2018	15	675	Anxiety; males and females; mean±SD and range NR	AE, RE; various intensities; 2w-10w	1) Anxiety (PSWQ, Liebowitz Social scale, Anxiety Sensitivity Index, BAI, STAI)	Critically low
Barreto 2015	20	1627	Dementia; males and females; mean±SD and range NR	AE, RE, Tai Chi, dance; various intensities; 6w-1y	1) Depression (GDS-15, GDS-30, MADRS, GSDD)	Critically low
Bellón 2021	14	1737	Adults without depression; males and females; 44.7±18.6	AE, RE, Yoga; various intensities; 4w-2y	1) Depression (HADS, PHQ-9, BDI, SCID-I, EPDS, POMS, CES-D, BDI-FS, GDS, BDI-II)	Critically low
Bergenthal 2014	9	818	Haematological cancer; males and females; 50.7±2.4	AE, RE; various intensities; 10d-36w	1) Depression (not specified) 2) Anxiety (not specified)	High
Bradt 2015	3	207	Breast cancer; females; 55.4±4.8	Dance; various intensities; 3w-12w	1) Depression (POMS, HADS) 2) Anxiety (HADS, Symptom Checklist 90-Revised)	High
Bridle 2012	9	667	Older adults with depression; males and females; 75.7±6.8	AE, RE, Tai Chi, Qigong; various intensities; 12w-1y	1) Depression (PHQ-9, GDS, HSCL-20, CES-D, HRSD, BDI, CSDD)	Low
Brinsley 2020	19	1080	Mental disorders; males and females; 38.5±9.4	Yoga; various intensities; 5w-12w	1) Depression (PANSS, HDRS, CES-D, HAD-C, FBGL, DASS-21, CDS, BDI, CAPS, HAM-D-21, QIDS)	Critically low
Broderick 2015	8	457	Schizophrenia; males and females; mean±SD and range NR	Yoga; various intensities; 4w-16w	1) Depression (Calgary Depression Scale)	Low
Brown 2012	40	2929	Cancer; males and females; 51.3±6.5	AE, RE, Yoga; various intensities; 3w-1y	1) CES-D, Center for Epidemiologic Studies Depression scale; POMS, Profile of Mood States; BDI, Beck Depression Inventory; HADS, Hospital Anxiety and Depression Scale; Symptom Assessment Scale.	Critically low
Carneiro 2020	4	295	Depression; males and females; 61.1±14.4	RE; various intensities; 10w-16w	1) Depression (HAM-D, CES-D, GDS, BDI)	Low
Carter 2019	18	1428	Postnatal women; females; 29.3±2.9	AE, RE; various intensities; 6w-14m	1) Depression (DASS, EPDS, GHQ12, HDRS, IDAS, PHQ, SCID, SF-36, HAM-D, SCID-PN diagnosis, SF-36v2, CES-D, PHQ-9, SCID-I)	Low

Reference	Studies (n=)	Total sample (n=)	Population or condition; gender; age mean±SD or range (years)	Main interventions; intensity; duration (range).	Relevant outcomes (instruments)	AMSTAR category
Chi 2013	4	253	Older adults with depressive symptoms; males and females; mean±SD NR; age range=52-82	Tai Chi; low-intensity; 12w-24w	1) Depression (DASS-21, CES-D)	Critically low
Choo 2020	13	869	Chronic diseases; males and females; 67.2±3.5	Tai Chi; low-intensity; 10w-24w	1) Depression (CES-D, Zung depression scale, Depression, Anxiety, and Stress Scales)	Low
Chung 2017	17	651	End Stage Renal Disease; males and females; mean±SD and range NR	AE, RE; various intensities; 8w-48w	1) Depression (Zung depression scale, BDI, SF-36)	Critically low
Cooney 2013	39	2326	Depression; males and females; 52.7±19.3	AE, RE; various intensities; 10d-16w	1) Depression (Hamilton Rating Scale for Depression, BDI, BDI-II, Lubin's Depression Adjective List, Zung Depression Scale, MADRS, HAM-D, Global Assessment Scale, CES-D, POMS, Cornell Scale for Depression in Dementia, GDS)	High
Coventry 2007	6	545	COPD; males and females; 65.3±2.9	AE, RE; various intensities; 5w-1y	1) Depression (HADS, Lorr-McNair Mood Questionnaire, CES-D, SCL-90-R) 2) Anxiety (HADS, STAI-State Anxiety, SCL-90-R)	Critically low
Craft 2012	15	1371	Cancer; males and females; 55.1±7.8	AE, RE; various intensities; 6w-6m	1) Depression (CES-D Short Form, CES-D, BDI-II, HADS)	Critically low
Dalgas 2015	15	591	Multiple sclerosis; males and females; 46.7±6.3	AE, RE, water aerobics, yoga, sports climbing; various intensities; 3w-26w	1) Depression (BDI-I, BDI-II HADS-D, MDI, CES-D, IDS-SR30, POMS)	Critically low
deAlmeida 2020	16	1129	Dementia; males and females; 77.3±7.3	AE, RE; various intensities; 6w-2y	1) Depression (Cornell Scale for Depression in Dementia, NPI Depression, GDS – Short Form) 2) Anxiety (Generalized Anxiety Disorder 7-item, NPI Anxiety)	Critically low
Duan 2020	15	1461	Cancer; males and females; 54.6±6.6	Yoga, Qigong, Tai Chi, Dance; various intensities; 3w-24w	1) Depression (HADS, BDI, CES-D, PHQ-9) 2) Anxiety (FACT-B, FACT-C, SF-12, FACT-G) 3) Distress (Perceived Stress Scale General Quality of Life: FACT-G, FACT-B, EORTC-QLQ-C-30)	Critically low
Eng 2014	13	1022	Stroke; males and females; mean±SD NR; age range=21-93	AE, RE; various intensities; 4-12w	1) Depression (HADS, GDS, BDI, CES-D)	Critically low
Ensari 2014	13	477	Multiple sclerosis; males and females; 45.1±5.8	AE, RE, water aerobics, yoga; various intensities; 4-26w	1) Depression (BFI, IFD, MDI, BDI-II, HADS, CES-D, POMS, POMS-SF)	Critically low

Reference	Studies (n=)	Total sample (n=)	Population or condition; gender; age mean±SD or range (years)	Main interventions; intensity; duration (range).	Relevant outcomes (instruments)	AMSTAR category
Felbel 2014	1	39	Haematological cancer; males and females; 51	Yoga; low intensity; 7w	1) Depression (CES-D) 2) Anxiety (STAI) 3) Distress (Impact of Events Scale)	High
Ferreira 2021	8	376	Kidney disease; males and females; 51.7±8.6	AE, RE, Pilates, intradialytic exercise; various intensities; 4w-48w	1) Depression (HADS, DASS, BDI, General Health Dimensions - depression subscale) 2) Anxiety (HADS, DASS)	Critically low
Fong 2012	34	4113	Cancer; males and females; 55.7±5.8	AE, RE, Yoga; various intensities; 3w-60w	1) Depression (HADS, BDI) 2) Anxiety (HADS)	Critically low
Forbes 2008	4	280	Dementia; males and females; mean±SD and range NR	AE, RE; various intensities; 2w-1y	1) Depression (MADRS)	Low
Furmaniak 2016	32	2626	Breast cancer; females; mean±SD and range NR	AE, RE; various intensities; 6w-1y	1) Depression (BDI, CES-D, HADS) 2) Anxiety (STAI, HADS)	High
Gascoyne 2020	4	133	Multiple sclerosis; males and females; 43.9±7.6	AE, RE; various intensities; 8w-26w	1) Anxiety (POMS, HADS, STAI, BAI)	Critically low
Gong 2015	6	375	Pregnant women; females only; mean±SD NR; range = 18-40	Yoga; various intensities; 12w-16w	1) Depression (CES-D, HADS, EPDS)	Critically low
Gordon 2018	33	1877	Adults with or without chronic conditions; males and females; 52±18	RE; various intensities; 6w-1y	1) Depression (BDI, GDS, CES-D, MDI, MHFI, DACL, HRSD, BRUMS-D, HADS, POMS, SCL-90-D, DSM, DASS-21)	Critically low
Gouw 2019	13	1340	Older adults with chronic disease; males and females; 70.4±6.2	Qigong; low intensity; 8w-26w	1) Depression (GDS, HADS, HRSD, Self-rating scale)	Critically low
Guo 2020	16	1096	COPD, males and females; 67.4±4.9	Tai Chi; various intensities; 2w-1y	1) Depression (HADS, Self-rating scale) 2) Anxiety (HADS, Self-rating scale)	Critically low
Hall 2021	17	1456	Knee osteoarthritis; males and females; 65.9±4.6	AE, RE, Yoga, Tai chi, Qigong; various intensities; 6w-1y	1) Depression (HADS, CES-D) 2) Anxiety (HADS)	Critically low
Heinzel 2015	18	1063	Older adults; males and females; 71.9±6.0	AE, RE, Tai chi, Qigong; various intensities; 6w-26w	1) Depression (HADS, HDG, HAM-D, PHQ-9, BDI, DSM-IV diagnostic criteria)	Critically low
Heissel 2019	10	479	HIV; males and females; mean±SD and range NR	AE, RE, Yoga; various intensities; 4w-12w	1) Depression (BDI, GHQ-28, POMS, HADS) 2) Anxiety (GHQ-28, POMS, HADS, STAI)	High

Reference	Studies (n=)	Total sample (n=)	Population or condition; gender; age mean±SD or range (years)	Main interventions; intensity; duration (range).	Relevant outcomes (instruments)	AMSTAR category
Herring 2017	14	624	Multiple Sclerosis; males and females; 44±6.6	AE, RE, Yoga; various intensities; 3w-26w	1) Depression (BDI, CES-D, HADS, IDS-SR, POMS, MDI)	Critically low
Josefsson 2014	15	880	Depression; males and females; 46.3±13	AE, RE; various intensities; 4w-16w	1) Depression (HRSD, BDI, MARDS, PHQ-9, MMPI)	Critically low
Kelley 2018	14	926	Arthritis and rheumatic diseases; males and females; 54.5±8.9	AE; RE; various intensities; 8w-32w	1) Depression (AIMS, BDI, CES-D, DASS-21, FIQ, HADs, MHI, VAS) 2) Anxiety (STAI, AIMS, HADS, DASS-21, MHI, FIQ, VAS)	High
Kelley 2015	29	2449	Arthritis; males and females; 52.3±9.7	AE, RE, Tai chi, Qigong; various intensities; 4w-32w	1) Depression (BDI, CES-D, DASS-21, MIH, FIQ, AIMS, POMS, HADS, VAS)	High
Krogh 2017	35	2498	Depression; males and females; 44±12.8	AE, RE; various intensities; 2w-32w	1) Depression (HAM-D17, SCL-D, BDI, MADRS, PHQ-9)	Low
Kvam 2016	23	977	Depression; males and females; 36.9±14.4	AE, RE; various intensities; 1w-8m	1) Depression (HAMD-17, MDD, BDI, BDI-II, SCL-90)	Critically low
Lawlor 2001	14	479	Depression; males and females; 44.7±17	AE, RE; various intensities; 4w-12w	1) Depression (BDI, Depression symptom checklist)	Critically low
Lawrence 2017	2	72	Stroke; males and females; 59.5±4.6	Yoga; various intensities; 8w-10w	1) Depression (GDS15) 2) Anxiety (STAI, STAI-Y1, STAI-Y2, Stroke Impact Scale version 3)	Critically low
Lee 2021	22	1025	Depression; males and females; 48.5±12.6	AE, RE; various intensities; 10d-24w	1) Depression (BDI-II, HAM-D, BDI, MADRS, MARDS-S, BRMS, GDS)	Critically low
Lee 2020	29	2989	Breast cancer; females; 50±7.7	AE, RE; Yoga; various intensities; 4w-26w	1) Depression (HADS, CES-D) 2) Anxiety (HADS, Spielberger State-Anxiety Inventory)	Critically low
Leng 2018	21	2589	Cognitive impairment; males and females; 76.3±5.9	AE, RE, Tai Chi, Yoga; various intensities; 6w-1y	1) Depression (CSDD, GDS, Depression Rating Scale, BDI, HAMD)	Critically low
Liu 2019	6	429	Lymphoma; males and females; 53.6±6.4	AE, Yoga, Qigong; various intensities; 3w-36w	1) Depression (CES-D)	Critically low
Li 2019	13	906	COPD; males and females; 63.9±6.9	Yoga, Qigong, Tai chi, various intensities; 8w-48w	1) Depression (CES-D, SSAI, HADS, BDI, Self-rating scale, HAMD) 2) Anxiety (HADS, STAI, Self-rating scale, HAMA)	Critically low

Reference	Studies (n=)	Total sample (n=)	Population or condition; gender; age mean±SD or range (years)	Main interventions; intensity; duration (range).	Relevant outcomes (instruments)	AMSTAR category
Li 2019	20	2051	Dementia; males and females; 80.9±5.1	AE, RE, dance; various intensities; 6w-18m	1) Depression (HAMD-17, GDS, CSDD, MADRS)	Critically low
Lund 2020	8	552	Colorectal cancer; males and females; 58±4.6	AE, RE; various intensities; 6w-24w	1) Depression (HADS, BDI)	Critically low
Lyu 2021	11	732	Stroke patients with mental or sleep disorders; males and females; 62.2±6.6	Tai Chi; low intensity; 6w-24w	1) Depression (CES-D, HAM-D, BDI) 2) Anxiety (HAMA)	Critically low
McCurdy 2017	16	1327	Postpartum women, females; 29.6±2.8	AE, RE, Yoga; various intensities; 6w-1y	1) Depression (EPDS, CES-D, HAMD)	Critically low
McGettigan 2020	16	992	Colorectal cancer; males and females; 59.5±4.6	AE, RE; various intensities; 6w-1y	1) Depression (HADS, CES-D) 2) Anxiety (HADS, STAI)	Low
McGranahan 2021	4	149	PTSD; males and females; 44.7±16.3	AE, RE; various intensities; 3w-12w	1) Depression (CES-D, DASS, PHD) 2) Anxiety (STAI, DASS)	Critically low
Miller 2020	69	5379	Older adults; males and females; 73.4±5.6	AE, RE, Yoga, Tai Chi, Qigong; various intensities; 4w-15m	1) Depression (BDI, CESD-20, POMS-D, GDS-15, GDS-30, BDI-II, MADRS, GADS-D, CSDD, TDQ, HADS-D, HRSD, DASS-D, IDS-C, GDS-5, POMS-SF-D, CESD-10, PROMIS-EDD SF-8a, CESD-6)	Low
Miller 2020	15	596	Older adults with depression; males and females; 73.9±5.9	AE, RE, Yoga, Tai Chi, Qigong, dance; various intensities; 4w-16w	1) Depression (GDS-15, CESD-20, GDS-30, HRSD, BDI, CSDD)	Low
Mishra 2012	40	3694	Cancer; males and females; 53.3±5.4	AE, RE, Yoga, Tai Chi, Qigong; various intensities; 3w-1y	1) Depression (CES-D, HADS, BDI, VAS, POMS) 2) Anxiety (HADS, STAI, VAS, POMS)	High
Morres 2019	11	455	Depression; males and females; Mean (SD) = 37 (9.4); range = 20.9-49.1	AE; various intensities; 10d-32w	1) Depression (HAMD-17, BDI, CIS, MADRS)	Critically low
Nebiker 2018	27	1452	Depression; males and females; 49.5±16.0	AE, RE, Yoga, Tai Chi; various intensities; 10d-32w	1) Depression (BDI, BDI-II, HRSD, CES-D, GDS-15, GDS, HAM-D, MADRS, PHQ-9)	Critically low

Reference	Studies (n=)	Total sample (n=)	Population or condition; gender; age mean±SD or range (years)	Main interventions; intensity; duration (range).	Relevant outcomes (instruments)	AMSTAR category
Nixon 2005	10	276	HIV/AIDS; males and females; mean±SD NR; age range=18-58	AE, RE; various intensities; 5w-24w	1) Depression (POMS)	Critically low
Park 2014	18	3297	Older adults; males and females; mean±SD and range NR	AE, RE, Yoga, Tai Chi, dance; various intensities; 4w-2y	1) Depression (GDS, GDS-15, HADS, Zung Self-rating depression scale, CES-D)	Critically low
Patsou 2017	14	1701	Breast cancer; females; 52.1±2.9	AE, RE, Yoga; various intensities; 6-1y	1) Depression (HADS, BDI-II, CES-D, POMS)	Critically low
Pavey 2011	8	5109	Adults; males and females; 59±7	AE; various intensities 8w-52w	1) Depression (not specified)	Critically low
Pearsall 2014	8	374	Schizophrenia; males and females; mean±SD NR; range = 27-52	AE; various intensities 10w-24w	1) Depression (BSI, WHOQOL-BREF-TR, BDI, MHI, CGI-Severity) 2) Anxiety (BSI, WHOQOL-BREF-TR, MHI, CGI-Severity)	Critically low
Peddle-McIntyre6 2019	6	221	Lung cancer; males and female; 60.9±5.3	AE, RE; various intensities; 4w-12w	1) Depression (GHQ-12, HADS) 2) Anxiety (GHQ-12, HADS)	Critically low
Pentland 2021	5	242	Postpartum women; females; 30±3.5	AE, RE; various intensities; 12w-6m	1) Depression (EPDS)	Critically low
Ramachandran 2021	14	2869	Heart disease; males and females; 59.4±5.7	AE; various intensities; 6w-6m	1) Depression (Patient Health Questionnaire, CES-D, DASS)	Critically low
Ramirez-velez 2021	57	6988	Breast cancer; females; 52.3±3.3	AE, RE; various intensities; 5w-1y	1) Depression (HADS, FACT-B Depression, BDI, Finnish version of modified BDI, CES-D) 2) Anxiety (HADS, FACT-B Anxiety, Social Physique Anxiety Scale-7, SSAI, State-Trait Anxiety Inventory (STAI))	Critically low
Ramos-Sanchez 2021	13	731	Anxiety disorder; males and females; 39.2±11.7	AE, RE; various intensities; 3w-20w	1) Anxiety (Hamilton Scale for Anxiety, Penn State Worry Questionnaire, Anxiety stress scale, Chinese Mandarin version STAI)	High
Rhyner 2016	41	NR	Older adults; males and females; 73.9±5.2	AE, RE, Yoga, Tai Chi, Qigong; various intensities; 3w-144w	1) Depression (GSD, CES-D, GSD-15, BDI, Taiwanese Depression Questionnaire, HSCL-20, DASS, HDRS, Cornell Scale for Depression in Dementia, MADRS)	Critically low

Reference	Studies (n=)	Total sample (n=)	Population or condition; gender; age mean±SD or range (years)	Main interventions; intensity; duration (range).	Relevant outcomes (instruments)	AMSTAR category
Rosenbaum 2015	4	200	PTSD; males and females; 43.7±6.7	AE, RE, Yoga; various intensities; 6w-12w	1) Depression (PSS-I, PCL-C, CAPS)	Critically low
Russ 2021	9	456	Dementia; males and females; 85.5±1	RE; various intensities; 12w-7m	1) Depression (GDS, CCSD, MADRS)	Critically low
Salihu 2021	28	2249	Adults; males and females; 65.3±16	Dance; various intensities; 10d-1y	1) Depression (BDI, GDS, POMS, CESD, HADS, DASS-21) 2) Anxiety (Test Anxiety Inventory, DASS-21, HADS, STAI)	Critically low
Schuch 2016	8	267	Older adults with depression or depressive symptoms; males and females; 69.5±0.71	AE, RE; various intensities; 6w-16w	1) Depression (HAM-D, GDS-15, BDI, GDS, PHQ-9, CES-D, CSDD)	Critically low
Schuch 2016	25	1487	Depression or depressive symptoms; males and females; 50.9±17.1	AE, RE; various intensities; 4w-32w	1) Depression (HAM-D, BDI, BDI-II, MARSD, GDS-15, CES-D, PHQ-9, DACL, MMPI, CSDD)	Critically low
Schumacher 2021	7	391	Prostate cancer, males; 67.9±1.5	AE, RE; various intensities; 4w-24w	1) Depression (CES-D, BDI)	Critically low
Singh 2018	61	5200	Breast cancer; females; 53±3.6	AE, RE, Yoga; various intensities; 6w-1y	1) Depression (POMs, HADs, CES-D, Greene Climacteric Scale, NDI, Functional Living Index of Cancer) 2) Anxiety (POMs, HADs, STAI, FACT-Amemia, Greene Climacteric Scale, SSAI, Social Physique Anxiety Scale, Functional Living Index of Cancer)	Critically low
Singh 2020	31	2109	Lung cancer; males and females; 64±3	AE, RE, Yoga; various intensities; 1w-20w	1) Depression (HADs, GHQ) 2) Anxiety (HADs, GHQ)	Critically low
Stathopoulou 2006	11	513	Depression; males and females; mean±SD and range NR	AE, RE; various intensities; 4w-16w	1) Depression (HRSD, EPSD, BDI, Self-rating scale, Depression - Symptom Checklist 90)	Critically low
Stubbs 2017	6	262	Anxiety or stress disorder; males and females; 34.7±9.6	AE; various intensities; 6w-12w	1) Anxiety (HAM-A, Penn State Worry Questionnaire, PSWQ, DASS21, PTSD symptom scale, PSSI, PTSD checklist–civilian version)	Critically low

Reference	Studies (n=)	Total sample (n=)	Population or condition; gender; age mean±SD or range (years)	Main interventions; intensity; duration (range).	Relevant outcomes (instruments)	AMSTAR category
Tu 2014	19	3447	Heart failure; males and females; 63.7±7.8	AE, RE, Tai Chi; various intensities; 6w-76w	1) Depression (Depression - Symptom Checklist 90, HADS, BDI, BDI-II, MADRS, Multiple Affect Adjective Checklist, GDS, HAM-D, Cognitive Behavioural Assessment Hospital form, CES-D, Psychological General Well-being Index, Hare-Davis Cardiac Depression Scale, POMS)	Critically low
vanHaren 2013	11	734	Cancer; males and females; mean±SD and range NR	RE, AE; various intensities; 4w-24w	1) Depression (POMS, HADS) 2) Anxiety (POMS, HADS) 3) Distress (Self-perception scale of physical and emotional well-being)	Critically low
Vashistha 2016	13	1057	Prostate cancer; males; 69.2±2.3	AE, RE, Qigong; various intensities; 4w-6m	1) Depression (BSI-18) 2) Anxiety (BSI-18)	Critically low
Wang 2014	22	2894	Substance use disorder; males and females; 38.9±5.8	AE, RE, Yoga, Tai Chi, sports; various intensities; 10d-6m	1) Depression (BDI, CES-D, Self-rating depression scale, HADS) 2) Anxiety (Self-rating scale, Hamilton Anxiety Scores, Mood and Physical Symptoms Scale-anxiety, STAI)	Critically low
Wang 2019	12	516	Heart failure; males and females; mean±SD NR; range = 43-74	AE, RE; various intensities; 8w-48w	1) Depression (not specified)	Critically low
Weber 2020	37	3224	Older adults; males and females; 72.2±7.3	Tai Chi, Qigong, Yoga, Pilates; various intensities; 4w-1y	1) Depression (GDS, GDS-SF, HADS, BDI, BDI-II, CES-D, DASS-21, MHI-18, POMS, POMS-SF, Taiwanese Depression Questionnaire, Warwick-Edinburgh Mental Well-being Scale)	Critically low
Wu 2019	6	415	COPD; males and females; 66.3±4.6	Qigong; various intensities; 4w-24w	1) Depression (Self-rating scale) 2) Anxiety (Self-rating scale)	Critically low
Xiang 2017	10	689	Fatigue; males and females; mean±SD NR; range=18-88	Tai Chi; various intensities; 4w-6m	1) Depression (POMS, POMS-SF, IDS-C, CES-D, BDI, BDI-II)	Critically low
Yi 2021	7	693	Breast cancer; females; 50.4±3.5	Yoga; various intensities; 8w-16w	1) Depression (BDI, POMS, HADS, Self-rating scale, CES-D) 2) Anxiety (POMS, HADs, Self-rating scale)	Critically low
Zeng 2019	12	915	Cancer; males and females; 62.2±4.3	Qigong; various intensities; 6w-12w	1) Depression (DASS, HADS) 2) Anxiety (DASS, HADS) 3) Stress (BSI, FACT-G)	Critically low

Reference	Studies (n=)	Total sample (n=)	Population or condition; gender; age mean±SD or range (years)	Main interventions; intensity; duration (range).	Relevant outcomes (instruments)	AMSTAR category
Zeng 2014	13	592	Cancer; males and females; mean±SD and range NR	Tai Chi; various intensities; 6w-24w	1) Depression (BDI, CES-D) 2) Anxiety (BAI)	Critically low
Zeng 2019	10	838	Cancer; males and females; 52.5±4.1	AE, RE; various intensities; 8w-96w	1) Depression (Not specified)	Critically low
Zhang 2019	5	803	Older adults with mild cognitive impairment; males and females; 74.8±5.7	Tai Chi; various intensities; 12w-1y	1) Depression (CDS)	Critically low
Zhao 2019	13	614	End-stage renal disease; males and females; 54.58±11.68	AR, RE, Yoga; various intensities; 8w-1y	1) Depression (BDI, HADS) 2) Anxiety (HADS)	Critically low
Zhou 2021	8	570	Lung cancer; males and females; 64.4±2.1	AR, RE, Tai Chi; various intensities; 6w-12w	1) Depression (HADS, GHQ-12) 2) Anxiety (HADS, GHD)	Critically low
Zuo 2016	21	1762	Breast cancer; females; 42.6±4.7	Yoga; various intensities; 2w-24w	1) Depression (HADS, BDI, CES-D, DMI, Self-rating scale) 2) Anxiety (HADS, STAI, Self-rating scale) 3) Distress (Positive and Negative Affect Schedule, Subjective Symptom Checklist, The Rotterdam Symptom Checklist)	Critically low
Abbreviations: AE: Aerobic exercise; RE: Resistance exercise; NR: Not reported						

eTable 3. AMSTAR 2 quality appraisal of reviews.

Review	AMSTAR 2 Items																Overall confidence rating
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Adamson 2015	Y	N	Y	PY	Y	Y	N	N	Y	N	Y	N	N	Y	N	N	Critically low
Aylett 2018	Y	N	Y	N	Y	Y	Y	Y	Y	N	N	N	N	Y	N	Y	Critically low
Barreto 2015	Y	N	Y	PY	Y	Y	N	Y	Y	N	Y	Y	Y	Y	Y	Y	Critically low
Bellón 2021	Y	N	Y	Y	Y	Y	N	Y	Y	N	Y	Y	Y	Y	Y	Y	Critically low
Bergenthal 2014	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	High
Bradt 2015	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	High
Bridle 2012	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Low
Brinsley 2020	Y	PY	Y	Y	Y	Y	N	Y	Y	Y	N	N	Y	N	Y	Y	Critically low
Broderick 2015	Y	PY	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Low
Brown 2012	Y	N	Y	N	N	Y	N	PY	Y	Y	Y	Y	Y	N	Y	Y	Critically low
Carneiro 2020	Y	PY	Y	Y	Y	N	Y	PY	Y	Y	Y	Y	Y	Y	N	Y	Low
Carter 2019	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Low
Chi 2013	Y	PY	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Critically low
Choo 2020	Y	PY	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Low
Chung 2017	Y	N	Y	N	Y	Y	N	N	Y	N	N	Y	Y	Y	Y	Y	Critically low
Cooney 2013	Y	PY	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	High

Review	AMSTAR 2 Items																Overall confidence rating
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Coventry 2007	Y	N	Y	PY	N	Y	N	Y	PY	N	Y	Y	Y	Y	N	Y	Critically low
Craft 2012	Y	N	Y	N	Y	Y	Y	Y	Y	N	Y	N	N	Y	Y	Y	Critically low
Dalgas 2015	Y	N	Y	N	N	N	N	Y	Y	N	Y	N	N	Y	N	Y	Critically low
deAlmeida 2020	Y	PY	Y	N	Y	N	N	Y	Y	N	Y	N	N	Y	N	Y	Critically low
Duan 2020	Y	N	Y	N	Y	Y	N	PY	Y	N	Y	Y	Y	Y	Y	Y	Critically low
Eng 2014	Y	N	Y	PY	N	Y	N	N	Y	N	Y	Y	Y	Y	Y	Y	Critically low
Ensari 2014	Y	N	Y	PY	N	N	N	N	Y	N	Y	N	Y	Y	Y	Y	Critically low
Felbel 2014	Y	Y	Y	PY	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	High
Ferreira 2021	Y	Y	Y	PY	Y	N	N	N	Y	N	Y	N	Y	Y	N	Y	Critically low
Fong 2012	N	N	N	N	Y	Y	N	PY	N	N	Y	Y	Y	Y	Y	Y	Critically low
Forbes 2008	Y	PY	Y	Y	Y	N	Y	Y	Y	N	Y	N	Y	Y	N	Y	Low
Furmaniak 2016	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	High
Gascoyne 2020	Y	Y	Y	Y	Y	Y	N	PY	N	N	Y	N	N	Y	N	Y	Critically low
Gong 2015	Y	N	Y	PY	N	Y	N	PY	PY	N	Y	N	N	Y	N	Y	Critically low
Gordon 2018	Y	N	Y	N	N	Y	N	PY	Y	N	Y	N	Y	Y	Y	Y	Critically low
Gouw 2019	Y	N	Y	Y	Y	Y	N	PY	Y	N	Y	N	N	N	N	Y	Critically low
Guo 2020	Y	Y	N	N	Y	Y	N	PY	Y	N	Y	Y	N	Y	N	Y	Critically low

Review	AMSTAR 2 Items																Overall confidence rating
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Hall 2021	Y	N	Y	PY	Y	Y	N	PY	Y	N	N	N	N	N	Y	Y	Critically low
Heinzel 2015	Y	N	Y	N	Y	Y	N	PY	Y	N	Y	Y	Y	Y	N	Y	Critically low
Heissel 2019	Y	PY	Y	PY	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	High
Herring 2017	Y	N	Y	PY	Y	Y	N	Y	Y	N	Y	Y	N	N	Y	Y	Critically low
Josefsson 2014	Y	N	Y	PY	N	N	N	PY	PY	N	Y	Y	Y	Y	N	N	Critically low
Kelley 2018	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	High
Kelley 2015	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	High
Krogh 2017	Y	Y	Y	PY	N	Y	N	PY	Y	Y	Y	Y	Y	Y	Y	Y	Low
Kvam 2016	Y	N	Y	Y	Y	Y	Y	Y	Y	PY	N	N	Y	Y	N	Y	Critically low
Lawlor 2001	Y	N	Y	Y	Y	Y	Y	Y	Y	PY	N	Y	N	N	Y	N	Critically low
Lawrence 2017	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	Y	N	Y	Critically low
Lee 2021	Y	Y	Y	N	Y	Y	N	Y	Y	N	Y	Y	Y	Y	N	Y	Critically low
Lee 2020	N	N	Y	N	Y	N	N	PY	N	N	N	N	N	N	N	Y	Critically low
Leng 2018	Y	N	Y	PY	Y	Y	N	PY	Y	N	Y	N	N	N	Y	Y	Critically low
Liu 2019	Y	N	Y	N	Y	Y	Y	N	Y	N	Y	Y	N	Y	N	Y	Critically low
Li 2019	Y	N	Y	PY	Y	Y	N	PY	Y	N	Y	N	N	Y	N	Y	Critically low
Li 2019	Y	N	Y	N	Y	Y	N	PY	Y	N	Y	Y	Y	Y	Y	Y	Critically low

Review	AMSTAR 2 Items																Overall confidence rating
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Lund 2020	N	Y	Y	PY	Y	N	N	N	Y	N	N	Y	Y	N	N	Y	Critically low
Lyu 2021	Y	Y	Y	PY	Y	Y	N	PY	Y	N	N	N	N	N	N	Y	Critically low
McCurdy 2017	Y	N	Y	PY	Y	Y	N	PY	Y	N	Y	Y	Y	Y	N	Y	Critically low
McGettigan 2020	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Low
McGranahan 2021	N	N	N	N	N	N	N	PY	N	N	Y	Y	Y	Y	Y	Y	Critically low
Miller 2020	Y	Y	Y	PY	Y	Y	N	Y	Y	N	Y	Y	Y	Y	Y	Y	Low
Miller 2020	Y	Y	Y	PY	N	Y	N	Y	Y	N	Y	Y	Y	Y	Y	Y	Low
Mishra 2012	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	High
Morres 2019	Y	N	Y	PY	Y	Y	N	PY	Y	N	Y	Y	Y	Y	Y	N	Critically low
Nebiker 2018	Y	N	Y	N	Y	Y	N	PY	Y	N	Y	Y	Y	N	Y	Y	Critically low
Nixon 2005	Y	Y	Y	Y	Y	Y	Y	PY	PY	N	Y	N	N	N	N	Y	Critically low
Park 2014	Y	N	Y	Y	Y	Y	N	N	Y	N	Y	Y	Y	N	Y	N	Critically low
Patsou 2017	Y	N	Y	N	N	N	N	Y	Y	N	Y	N	N	N	Y	Y	Critically low
Pavey 2011	Y	N	Y	N	Y	N	Y	PY	Y	N	Y	N	N	Y	N	Y	Critically low
Pearsall 2014	Y	N	Y	N	N	N	N	PY	Y	N	Y	N	N	Y	N	Y	Critically low
Peddle-McIntyre 2019	Y	Y	Y	Y	Y	Y	Y	PY	Y	N	Y	N	N	Y	N	Y	Critically low
Pentland	Y	PY	Y	N	Y	Y	N	PY	Y	N	Y	N	N	Y	Y	Y	Critically low

Review	AMSTAR 2 Items																Overall confidence rating
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Ramachandran 2021	Y	N	Y	PY	Y	Y	Y	PY	Y	Y	Y	N	N	Y	N	Y	Critically low
Ramirez-velez 2021	Y	PY	Y	N	Y	Y	N	PY	Y	N	Y	Y	Y	Y	Y	Y	Critically low
Ramos-Sanchez 2021	Y	Y	Y	PY	Y	Y	PY	PY	Y	Y	Y	N	Y	Y	Y	Y	High
Rhyner 2016	Y	N	Y	PY	N	N	N	PY	N	N	Y	N	N	N	Y	N	Critically low
Rosenbaum 2015	Y	N	Y	Y	Y	Y	N	PY	PY	N	Y	N	N	Y	Y	N	Critically low
Russ 2021	Y	N	Y	N	Y	N	N	PY	Y	N	Y	N	N	Y	N	Y	Critically low
Salihu 2021	Y	Y	Y	N	Y	N	N	Y	Y	N	Y	Y	Y	Y	N	Y	Critically low
Schuch 2016	Y	N	Y	PY	Y	Y	N	N	Y	N	Y	Y	N	N	Y	Y	Critically low
Schuch 2016	Y	N	Y	PY	Y	Y	N	N	Y	N	Y	Y	Y	N	Y	Y	Critically low
Schumacher 2021	Y	PY	Y	PY	Y	Y	N	N	Y	N	N	N	N	Y	N	N	Critically low
Singh 2018	Y	N	N	Y	N	N	N	N	Y	N	Y	Y	Y	Y	Y	Y	Critically low
Singh 2020	Y	N	Y	Y	N	N	N	Y	Y	N	Y	Y	Y	N	N	Y	Critically low
Stathopoulos 2006	N	N	Y	N	N	N	Y	Y	N	N	N	N	N	N	Y	N	Critically low
Stubbs 2017	Y	N	Y	Y	Y	Y	N	Y	Y	N	Y	N	N	Y	Y	Y	Critically low
Tu 2014	Y	N	Y	N	N	Y	N	Y	Y	N	Y	N	Y	Y	Y	Y	Critically low
vanHaren 2013	N	N	Y	N	N	N	N	N	Y	N	Y	Y	N	N	N	N	Critically low
Vashistha 2016	Y	PY	Y	N	Y	Y	N	PY	Y	N	Y	N	N	N	N	Y	Critically low

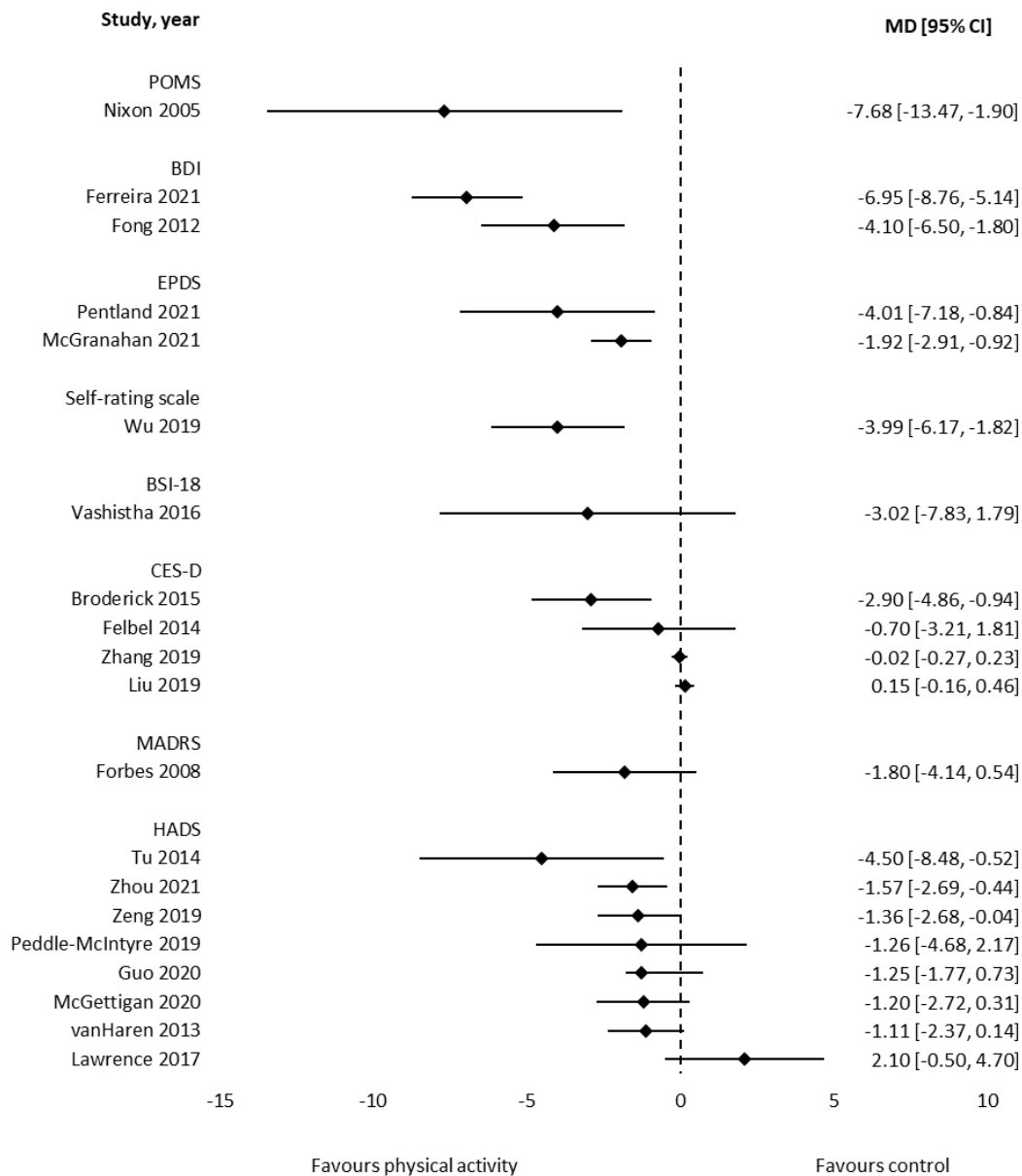
Review	AMSTAR 2 Items																Overall confidence rating
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Wang 2014	N	N	Y	N	Y	Y	N	PY	PY	N	N	N	N	Y	Y	Y	Critically low
Wang 2019	Y	N	Y	N	Y	Y	N	N	Y	N	N	N	N	N	N	N	Critically low
Weber 2020	Y	N	N	N	N	Y	N	PY	Y	N	N	N	N	N	Y	Y	Critically low
Wu 2019	Y	N	Y	N	Y	Y	N	PY	Y	N	N	N	N	N	N	Y	Critically low
Xiang 2017	Y	Y	Y	N	Y	N	N	PY	Y	N	Y	Y	Y	Y	Y	Y	Critically low
Yi 2021	Y	N	N	N	Y	Y	N	PY	Y	N	N	N	N	Y	Y	Y	Critically low
Zeng 2019	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	Y	Critically low
Zeng 2014	Y	N	N	Y	Y	Y	N	PY	Y	N	N	N	N	N	N	Y	Critically low
Zeng 2019	Y	N	N	Y	N	Y	N	PY	Y	N	Y	Y	Y	Y	N	Y	Critically low
Zhang 2019	Y	N	N	Y	Y	Y	N	PY	Y	N	N	Y	N	Y	N	Y	Critically low
Zhao 2019	Y	N	N	N	Y	Y	N	PY	Y	N	N	N	N	N	Y	Y	Critically low
Zhou 2021	Y	N	N	N	Y	Y	N	PY	Y	N	Y	N	N	Y	N	Y	Critically low
Zuo 2016	Y	N	N	N	Y	Y	N	PY	Y	N	N	N	N	N	Y	N	Critically low

Note: Y=yes; N=no; Partial Y=meets criteria for partial yes; N/A=not applicable as no meta-analysis conducted

Legend: AMSTAR 2 Items: 1) The Participant, Intervention, Comparator and Outcome (PICO) components included in the review research question and inclusion criteria; 2) Explicit statement included that review methods were established prior to conduct and significant deviations justified; 3) Selection of included study designs explained; 4) Comprehensive search strategy used; 5) Study selection performed in duplicate; 6) Data extraction performed in duplicate; 7) List of excluded studies with justification provided; 8) Included studies described in adequate detail; 9) Satisfactory technique used for assessing risk of bias in included studies; 10) Sources of funding for included studies reported; 11) Appropriate methods for statistical combination of results used if meta-analysis performed; 12) Potential impact of risk of bias of individual studies assessed if meta-analysis performed; 13) Risk of bias of individual studies accounted for in discussion of the review results; 14) Any heterogeneity observed in the review

results was explained and discussed; 15) Publication bias investigated and discussed if meta-analysis performed; 16) Authors reported any potential sources of conflict of interest.

eFigure 3. Results of meta-analyses that assessed depression using mean differences.



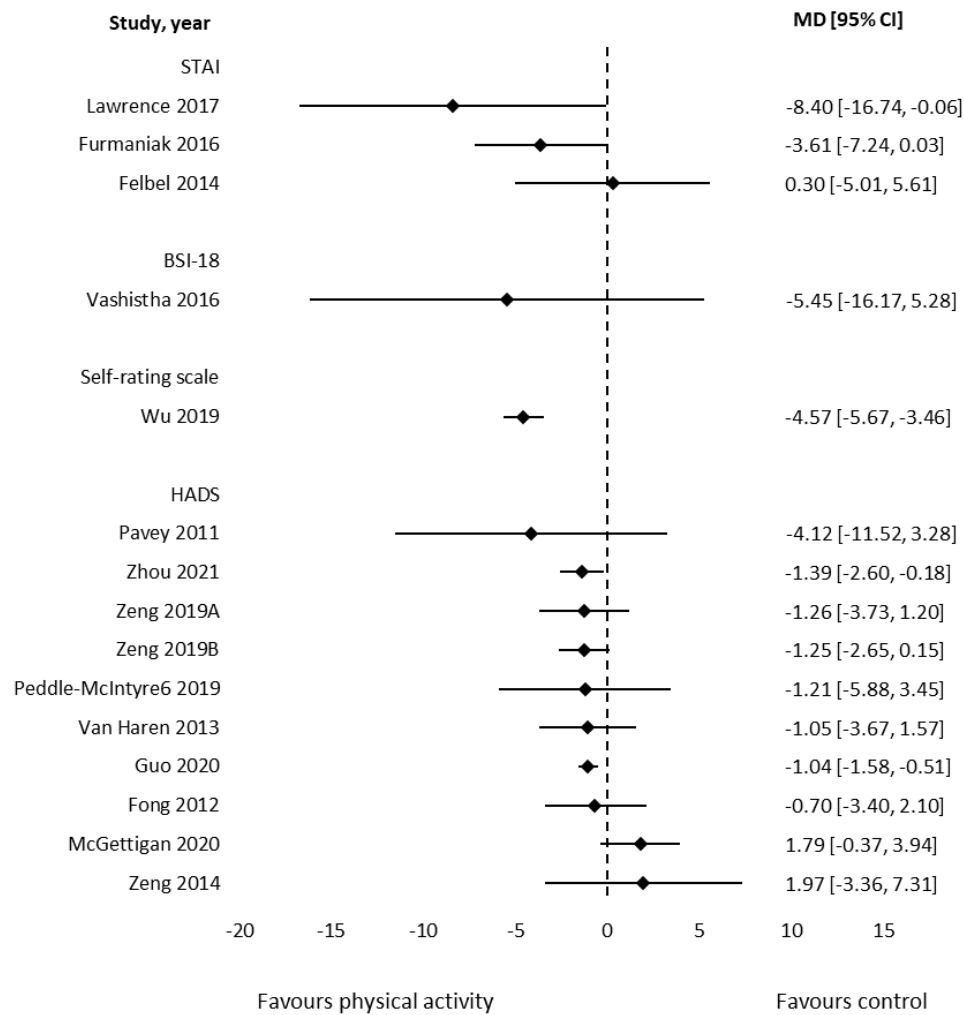
BDI: Beck Depression Inventory; CES-D: Center for Epidemiological Studies Depression; EPDS: The Edinburgh Postnatal Depression Scale; HADS: Hospital Anxiety and Depression Scale; MADRS: Montgomery-Asberg Depression Rating Scale; POMS: Profile of Mood States.

eTable 4. Overview of results of meta-analyses using mean differences for anxiety and depression.

	Reviews	Studies	Participants	Mean difference			Standardised mean difference (95% CI)
				25%ile	Median	75%ile	
Depression (instrument)							
Profile of Mood States	1	2	65		-7.68		-0.96 (-1.47, -0.44)
Beck Depression Inventory	2	7	>134	-6.24	-5.53	-4.81	-0.69 (-1.04, -0.34)
The Edinburgh Postnatal Depression Scale	2	19	1110	-3.49	-2.97	-2.44	-0.74 (-0.86, -0.62)
Self-rating scale	1	6	415		-3.99		-0.79 (-0.99, -0.59)
Brief Symptom Inventory 18	1	2	92		-3.02		
Center for Epidemiological Studies Depression	4	6	847	-1.25	-0.36	0.02	-0.72 (-0.85, -0.58)
Montgomery-Asberg Depression Rating Scale	1	1	117		-1.80		-0.33 (-0.74, -0.07)
Hospital Anxiety and Depression Scale	8	15	622	-1.41	-1.26	-1.18	-0.18 (-0.33, -0.02)
Anxiety (Instrument)							
The State-Trait Anxiety Inventory	3	4	262	-6.01	-3.61	-1.66	-0.51 (-0.76, -0.27)
Brief Symptom Inventory-18	1	2	92		-5.45		-0.49 (-0.91, -0.08)
Self-rating scale	1	6	415		-4.57		-0.41 (-0.61, -0.22)
Hospital Anxiety and	10	22	3360	-1.13	-1.26	-0.79	-0.21 (-0.27, -0.14)

Depression Scale							

eFigure 5. Results of meta-analyses that assessed anxiety using mean differences.



BSI-18: Brief Symptom Inventory-18; HADS: Hospital Anxiety and Depression Scale; STAI: The State-Trait Anxiety Inventory.

Figure 6. Results of subgroup meta-analyses for depression based on physical activity mode.

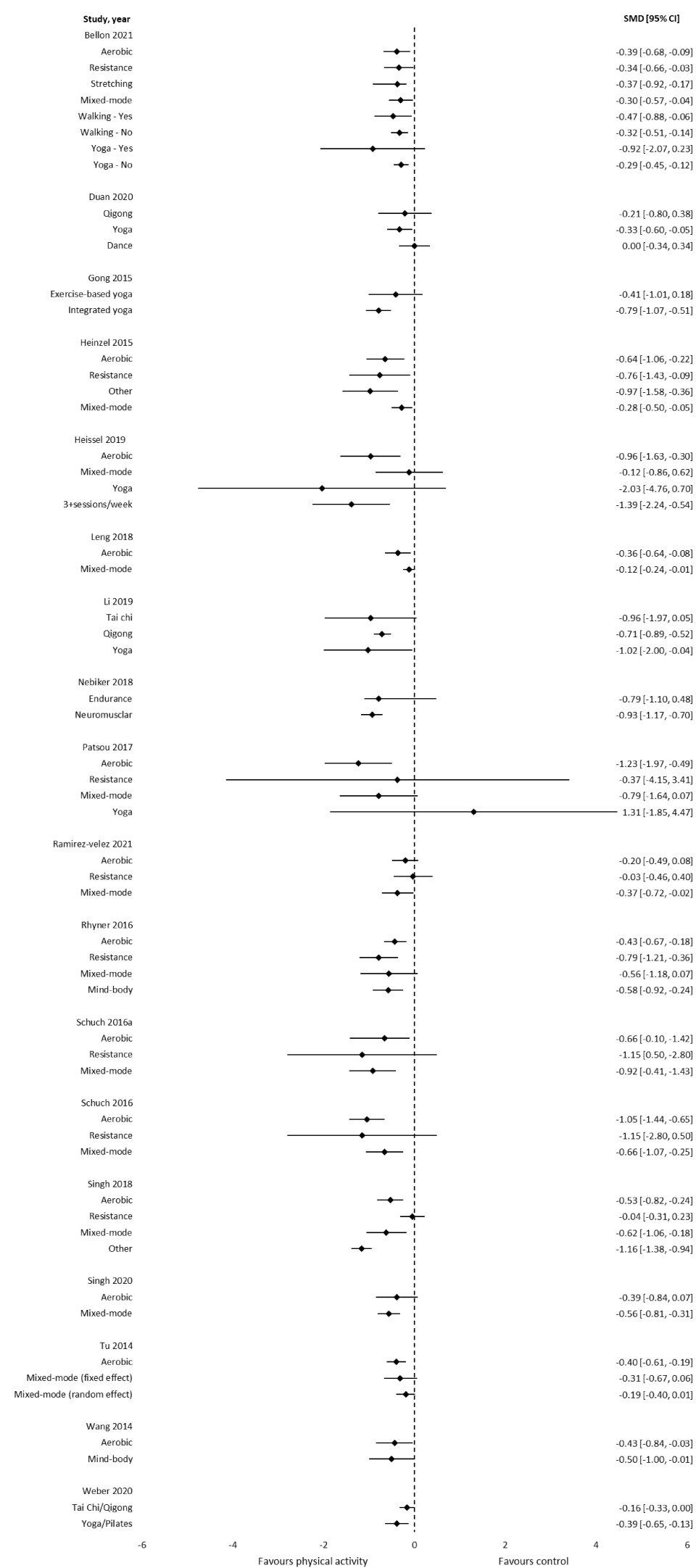


Figure 7. Results of subgroup meta-analyses for anxiety based on physical activity mode.

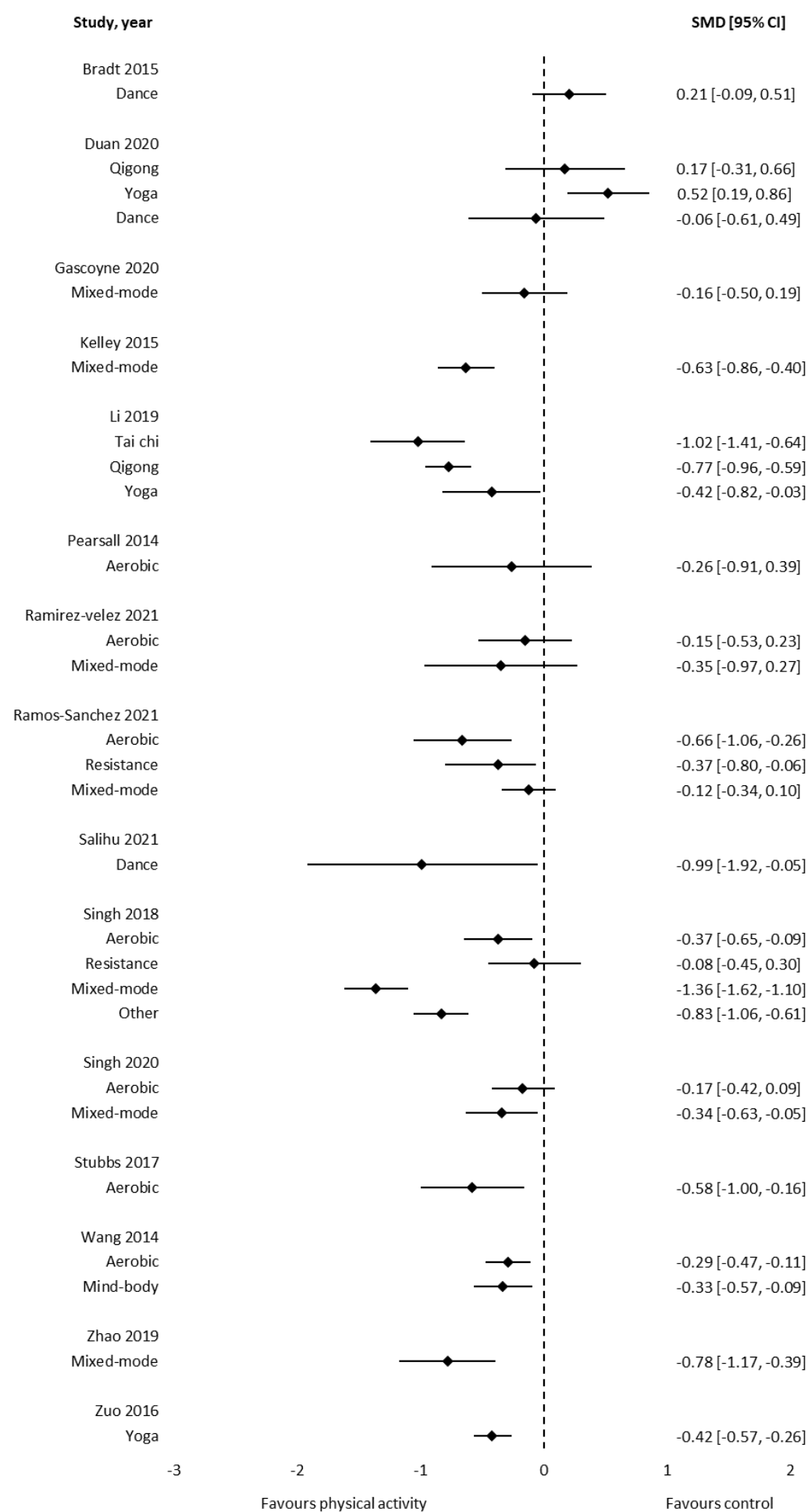


Figure 8. Results of subgroup meta-analyses for depression based on physical activity intensity.

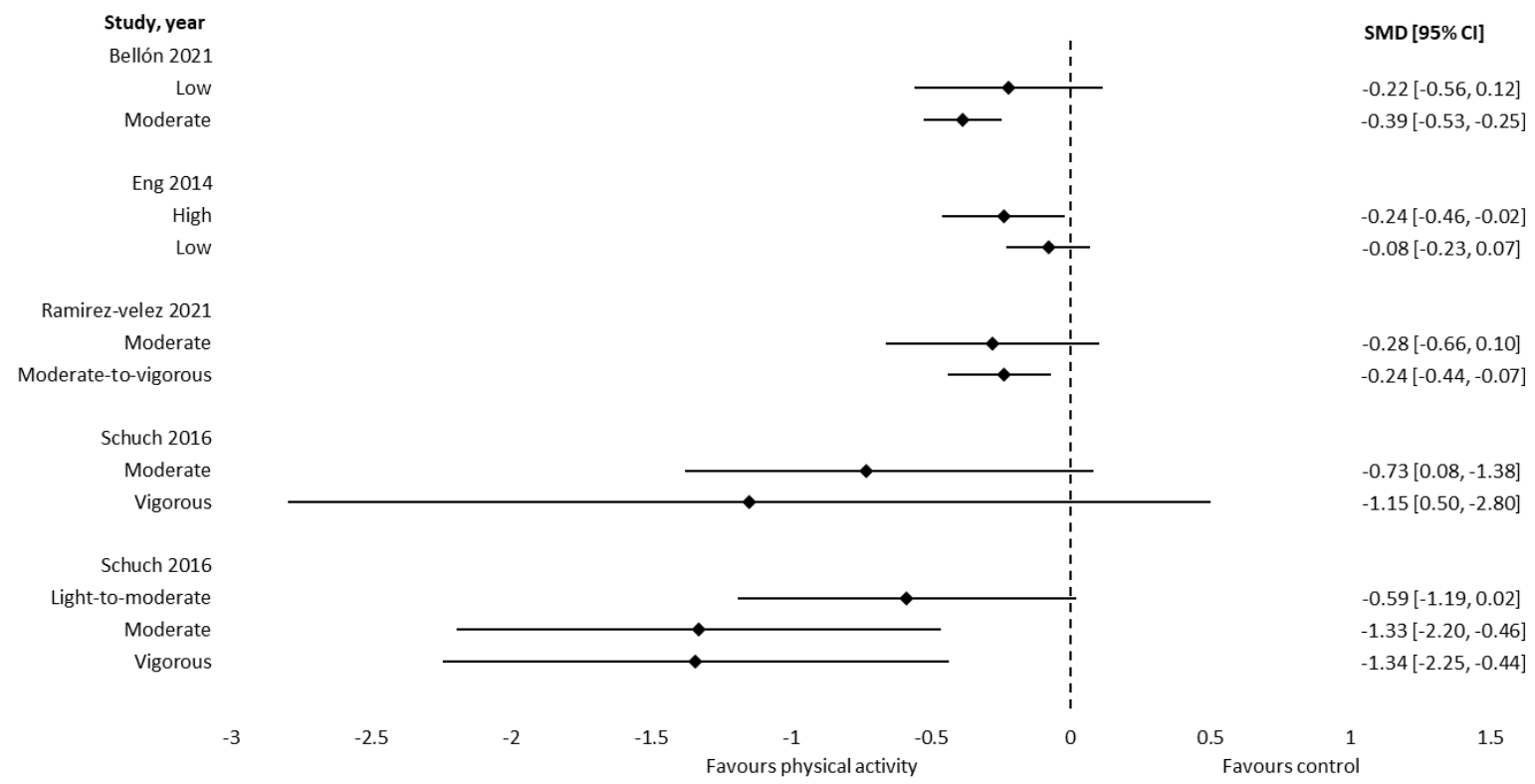


Figure 9: Results of subgroup meta-analyses for anxiety based on physical activity intensity.

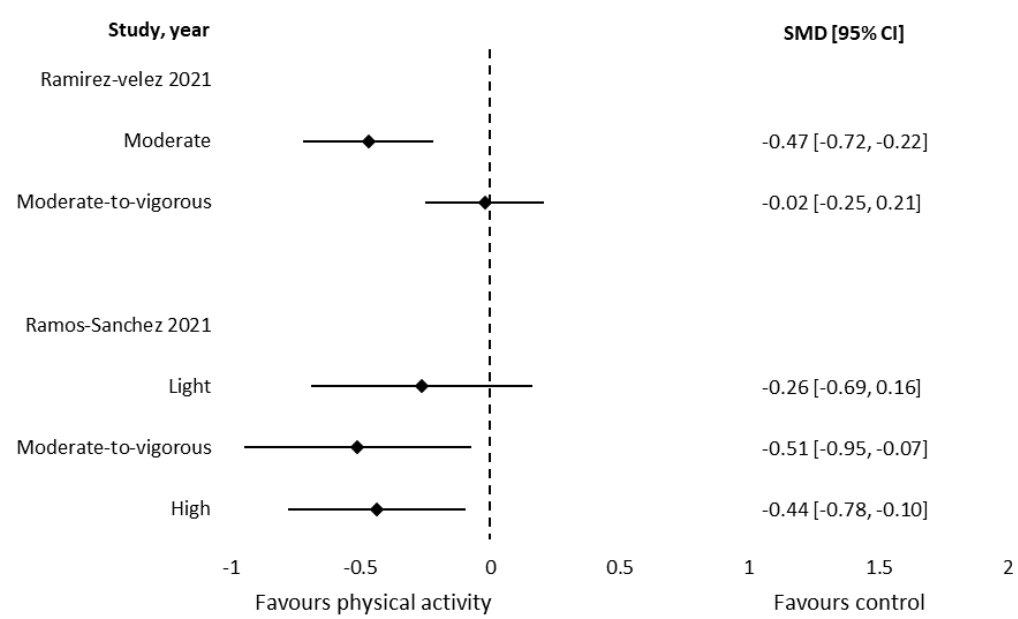


Figure 10: Results of subgroup meta-analyses for depression based on intervention duration.

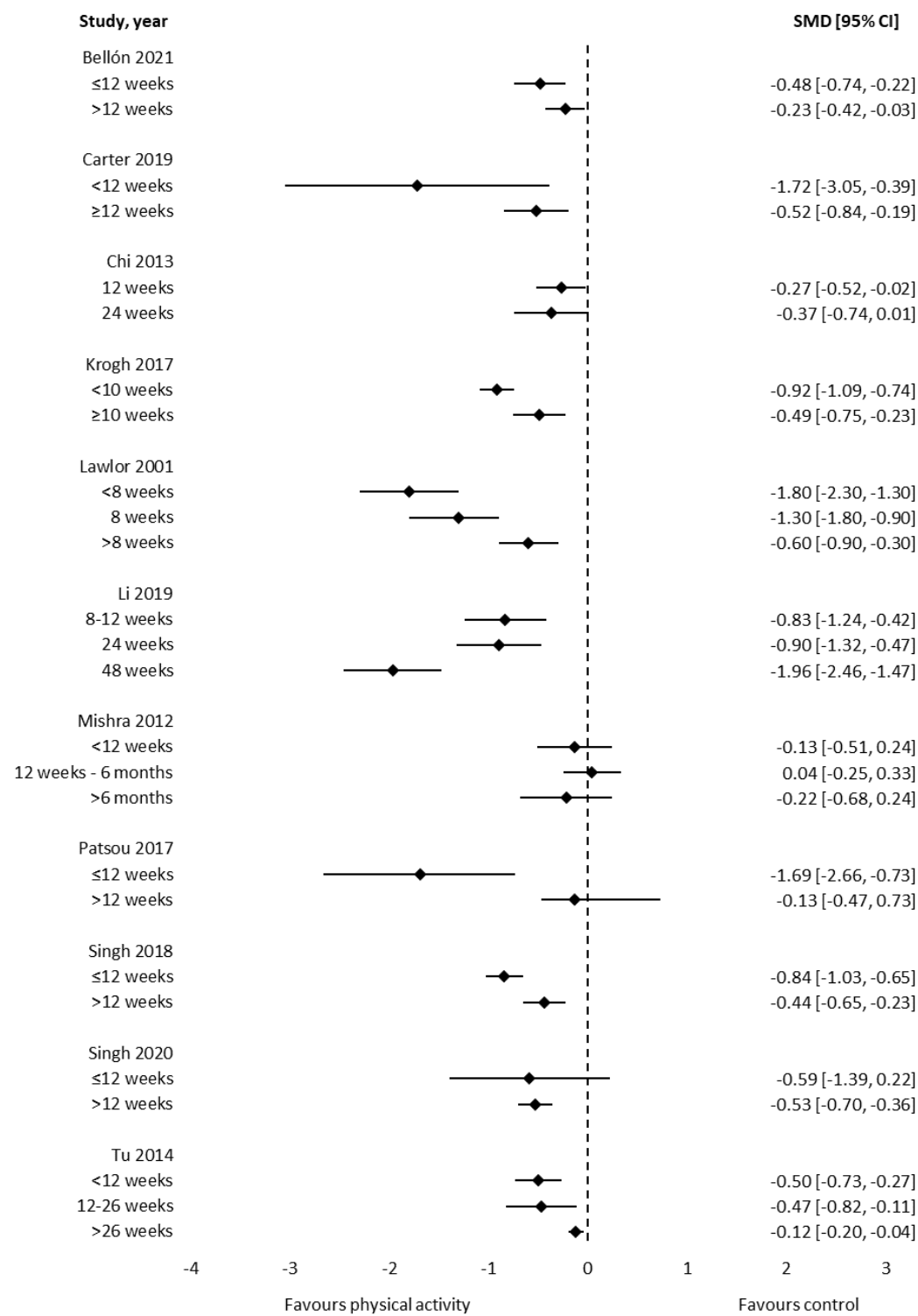


Figure 11: Results of subgroup meta-analyses for anxiety based on intervention duration.

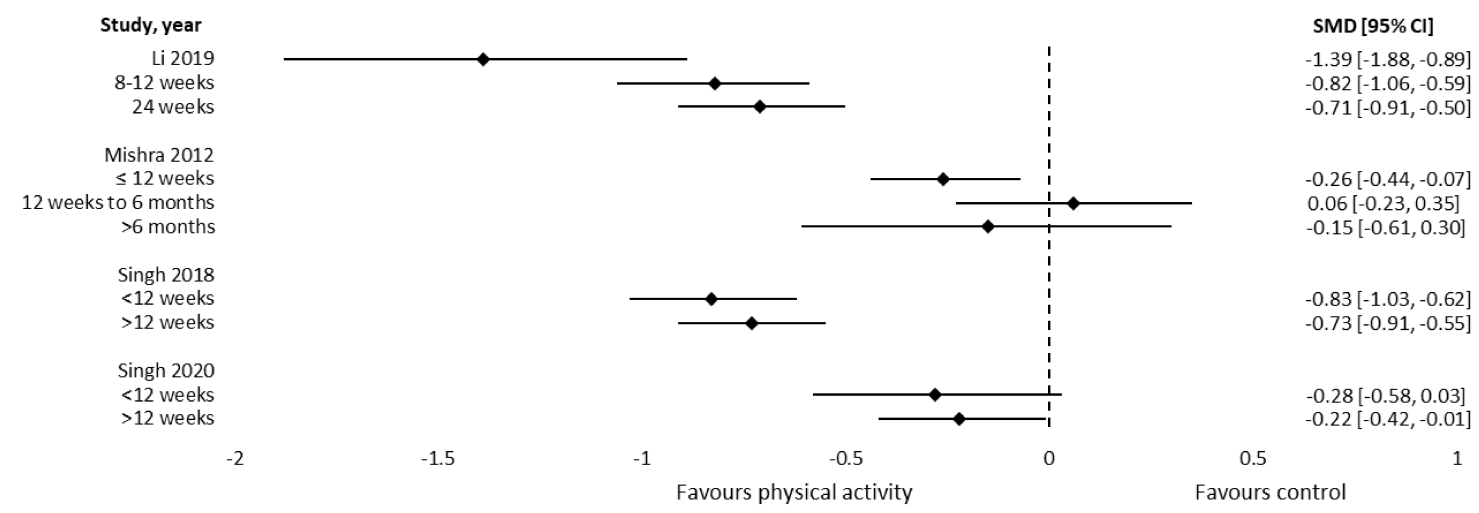


Figure 12: Results of subgroup meta-analyses for depression based on weekly duration.

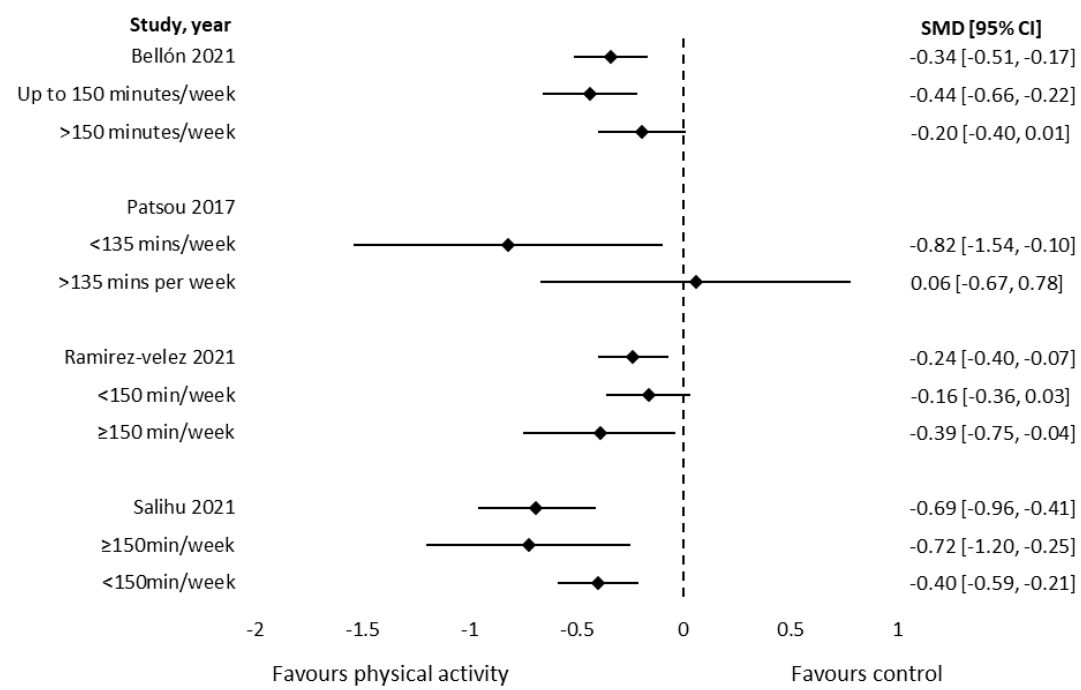
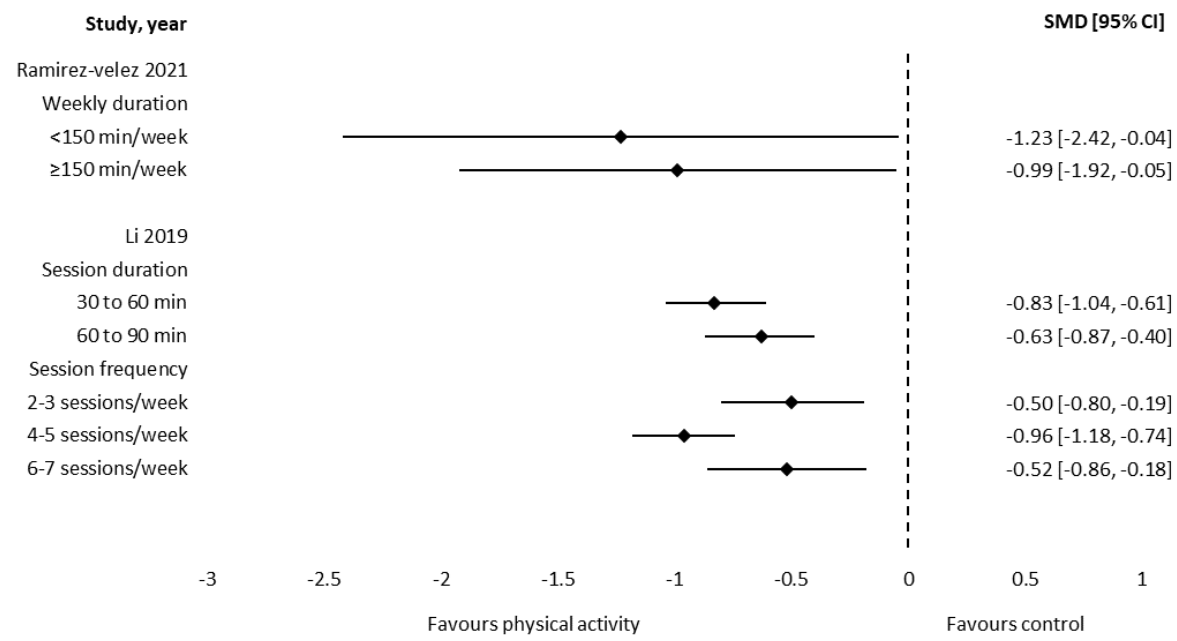
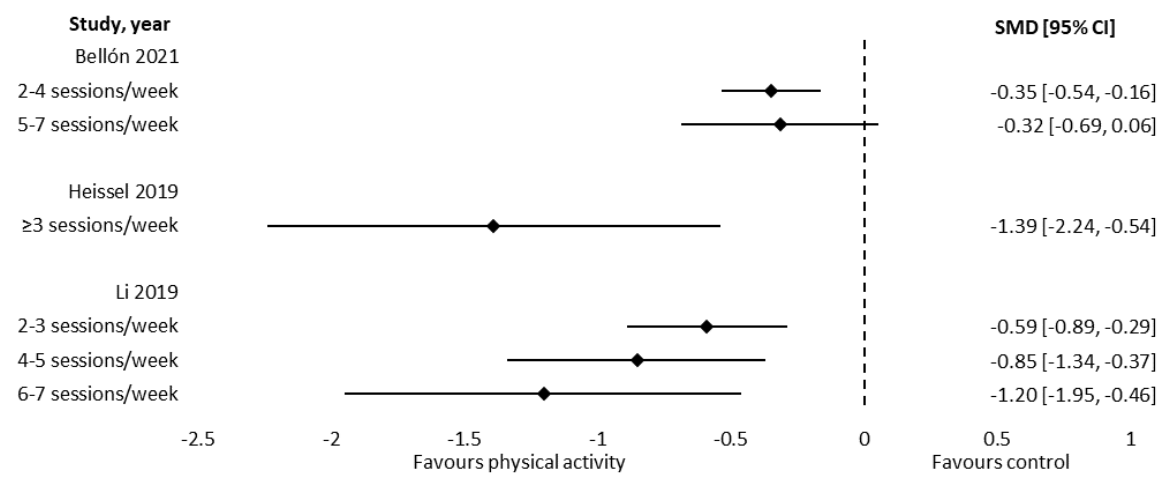


Figure 13: Results of subgroup meta-analyses for anxiety based on weekly duration, session duration and session frequency.



eFigure 14: Results of subgroup meta-analyses for depression based on session frequency.



eFigure 15: Results of subgroup meta-analyses for depression based on session duration.

