Table 2: Characteristics of included studies

Author (Year)	Population	Participants	Intervention	Duration	Outcome Measures	Results
Albores (2013)	COPD	n=25 (Exp = 25) Age (yr) = 68±10	Exp = Nintendo Wii™ (*Wii Fit*™)	12 week unsupervised home exercise: >30 minutes per day, most days of the week	a) ESWT b) Arm lifts c) STS d) Dyspnoea (MRC, CRQ) e) Total play time	ESWT improved (*P*=.005) by 131±183s after 12 weeks of training, Significant increases in sit-to stands (*P*=.01) and arm lifts (*P*=.02) in 60s.
Bingham (2012)	CF	n=19 (Exp/Con = 19) Age (yr) = 9.3±1.3	Exp = Custom spirometer games Con = Non-game spirometer program	2-3 weeks unsupervised home exercise. Ad libitum exercise with daily prompting.	a) FEV1 b) VC c) Days used (of days available) d) Minutes used (per day available)	FEV1, as a % of predicted FEV1, was better maintained (*P*=.01) in Exp, per day used, than in Con (0.3±2.4 vs -2.5±5.2%/day). There was no significant difference in minutes used per day with the Exp vs Con (*P*=.07).
del Corral (2014)	CF	n=24 (Exp/Con = 24) Age (yr) = 12.6±3.7	Exp1 =Nintendo Wii™ (*Wii Fit™ Plus*) Exp2= Nintendo Wii™ (*EA Sports Active*™) Exp3= Nintendo Wii™ (*Family Trainer Extreme Challenge*) Con= 6MWT	Single session: Exp1-3 = 5 minutes Con = 6 minutes	a) HR (max) b) Dyspnoea (11-point Borg) c) SpO_2 d) VO_2 e) VE	VO_2 was higher (*P*<.0001) in Exp2 (1232.2±427.2ml/min) and Exp3 (1252.6±360.2 ml/min) than in Con (1024.2±282.2ml/min) during the last 3 minutes. VO_2 and VE were lower in Exp1 than Con. No difference in dyspnoea or SpO_2 between interventions.
del Corral (2017)	CF	n=40 (Exp = 20, Con = 20) Age (yr) = Exp 12.6±3.1; Con 11±3	Exp = Nintendo Wii™ (*EA Sports Active*™ 2) Con = usual care (no intervention)	Exp = 6 weeks unsupervised home exercise; 30-60 minute sessions, 5 day per week	a) MSWT b) 6MWT c) Horizontal jump test d) Medicine ball throw e) Grip strength f) CFQ-R g) Adherence (Exp only)	In Exp, MSWT distance improved by 58.95±55.22m (*P*<.05) and 6MWT distance improved by 30.95±15.44m (*P*<.01). Con showed no improvement. Horizontal jump distance, medicine ball throw distance, and

				12 month follow-up		grip strength improved in Exp ($p < 0.01$) but not in Con. CFQ physical activity subsection improved in Exp ($P<.05$) but not in Con. Adherence to Exp was 95% in the 6-week intervention, and 35% in the 12-month followup. Except for 6MWT distance and horizontal jump distance, all improvements were maintained over 12-month followup.
Gomes (2015)	Asthma	n=36 (Exp = 20, Con = 16) Age (yr) = Exp 7.5±1.9; Con 8.0±2.0	Exp = Microsoft Xbox 360 Kinect™ (*Kinect™ Adventures! - Reflex Ridge*) Con = treadmill	8 weeks supervised exercise: 40 minute sessions, 2 days per week	a) MET b) Energy expenditure c) VO2 max d) HR (average) e) FEV1/FVC f) FeNO	Total energy expenditure was higher ($P<.01$) in Exp (159.9±41.6cal) vs Con (133.3±32.1cal). Both Exp and Con showed a significant improvement in VO_2 max after training. FeNO was significantly reduced in Exp ($P=.04$) but not in Con ($P=.64$).
Hoffman (2013), Hoffman (2014)	Lung Cancer (Postthoracotomy)	n=7 (Exp =7) Age (yr) = 64.6±6.5	Exp = Nintendo Wii™ (*Wii Fit™ Plus*)	6 weeks of unsupervised home exercise: 5 minutes per day in week 1 to 30 minutes per day in week 7; 10 week follow-up assessment	a) Steps/day	Steps per day changed from 4650±3105 in week 1 to 6393±3752 in week 6.
Holmes (2013)	CF	n=10 (Exp/Con = 10) Age (yr) = 29±6	Exp = Microsoft Xbox Kinect™ (*Your Shape™: Fitness Evolved*) Con= cycle ergometer	Single session: Exp = 20 minutes Con = 8-12 minutes	a) %max HR achieved b) % of HR achieved in control c) SpO_2 d) Dyspnoea (11-point Borg)	Mean HR in the final 10 minutes of Exp was 86% (95% CI [81,92]) of the peak HR in Con.

Kuys (2011)	CF	n=19 (Exp/Con = 19) Age (yr) = 28±7	Exp = Nintendo Wii™ (*EA Sports Active*™) Con= treadmill or stationary cycle	Single session: Exp/Con = 15 minutes	a) HR (average, max, min) b) MET c) Energy expenditure d) SpO_2 e) Enjoyment f) RPE g) Dyspnoea (11-point Borg) h) Perceived feasibility	No significant differences in interventions in mean HR (MD=3bpm, 95% CI [-3, 9] or METs (MD=0.1, 95% CI [-0.3,0.5]. Exp was significantly more enjoyable than Con (MD=2.6cm, 95% CI [1.6, 3.6].
LeGear (2016)	COPD	n=10 (Exp/Con = 10) Age (yr) = 65±9	Exp = Nintendo Wii™ (*EA Sports Active*™) Con= treadmill	Single session: Exp/Con = 15 minutes	a) HR (average) b) EE c) SpO_2 d) RPE e) Dyspnoea (11-point Borg) f) Enjoyment	No significant differences in interventions in mean HR (MD=-0.167bpm, 95% CI [--4.83, 4.50]) or EE (MD=36.3J, 95% CI [-31.4, 104]) between Exp and Con. 50% strongly agreed Exp was enjoyable, compared to 11% for Con.
Mazzoleni (2014)	Chronic respiratory diseases (mostly COPD)	n=40 (Exp = 20, Con = 20) Age (yr) = Exp 68.9±11; Con 73.5±9.2	Exp = usual pulmonary rehabilitation + Nintendo Wii™ (*Wii Fit*™ *Plus*) Con = usual pulmonary rehabilitation alone	3 weeks supervised exercise: Exp = 7 daily 30 minute game sessions in final week	a) 6MWT b) Arm cycle power c) Leg cycle power d) MIP/MEP e) Program acceptability	6MWT improved more (*P*=.028) in Exp (97.4±64.8m) vs Con (61.1±28.3m). Dyspnoea also showed more improvement in Exp than the Con (*P*<.001).
Salonini (2015)	CF	n=30 (Exp/Con = 30) Age (yr) = 12±5	Exp = Microsoft Xbox 360 Kinect™ (*Kinect*™ *Adventures! - River Rush*) Con = stationary cycle	Single session: Exp/Con = 20 minutes	a) HR (max) b) % HR target reached c) SpO_2 d) Dyspnoea (modified VAS) e) Enjoyment	No significant difference (*P*=.2) in the maximum HR reached in Exp (165.0±23.6bpm) vs Con (170.8±13.2bpm). Exp was rated lower in dyspnoea (*P*<.001) and higher in enjoyment (*P*<.001) than Con.
Wardini (2013)	COPD	n=32 (Exp = 32) Age (yr) = 66±9	Exp = Nintendo Wii™ (*Wii Sports*™, *Wii Sports Resort*™, *Wii Fit*™ *Plus*)	3-4 weeks supervised exercise: Offered 3/week, average	a) HR (average) b) Dyspnoea (modified Borg) c) SpO_2 d) Adherence e) Attendance f) Enjoyment	HR and dyspnoea increased from 88.1±14.8bpm and 1.5±1.1 (modified Borg scale) at rest to 101.9±18bpm and 3.2±1.2

	session length = 14 minutes	during the game session compared to *P*<.001 for both), while SpO_2 dropped from 93.7±2.8% to 90.7±4.6% (*P*<.001). Adherence and attendance was 76% and 64±35%, compared to 100% and 88±13% for conventional PR.

COPD = chronic obstructive pulmonary disease, CF = cystic fibrosis, n = sample size, Exp = experimental group (active video game), Con = control group, 6MWT = 6-minute walk test, ISWT = incremental shuttle walk test, ESWT = endurance shuttle walk test, STS = sit-to-stand, MRC = Medical Research Council dyspnoea rating, CRQ = chronic respiratory questionnaire, FEV1 = forced expiratory volume in 1 second, VC = vital capacity, HR = heart rate, SpO_2 = peripheral blood oxygen saturation, VO_2 = volume of oxygen consumption, VE = exhaled minute volume, BPM = beats per minute, MSWT = modified shuttle walk test, CFQ-R = Cystic Fibrosis Questionnaire Revised, MET = metabolic equivalent, FVC = forced vital capacity, FeNO = fraction of exhaled nitric oxide, RPE = rating of perceived exertion, EE = energy expenditure, MIP = maximal inspiratory pressure, MEP = maximal expiratory pressure, CI = confidence interval, VAS = visual analogue scale