

1 Supplemental Content 2. Characteristics of Included Research Studies

Study	Population	Intervention Design, Duration of Phases, Specific Aims	Exercise/PA Prescription and Primary Measurement	Results and Follow Up
Fitterling et al., 1988	N=5, 33-56 years, all female, various medication regimens to control vascular headache pain and occurrence	Design: Changing Criterion Baseline: 6 weeks Intervention: 12-13 weeks Follow Up: 3 and 6 months post-intervention Specific Aims: Examine the efficacy of a behavioral adherence package for modifying aerobic exercise behavior in vascular headache sufferers	F: 3 days/week I: N/R T: N/R T: Aerobic Exercise (stationary cycle, walking, jogging) V: N/R P: Goals increased when exercise consistently met criterion for 3 data points Measurement: Cooper Points in relation to headache frequency	Results: -5 participants increased aerobic exercise levels -Cooper Points/week increased from 0.8 to 23.6 Follow Up: -4 subjects maintained exercise behavior 3 (14.9 Cooper Points/week) and 6 months (9.0 Cooper Points/week) post-intervention
Gorczynski et al., 2014	N=4, ≥18 years, Schizophrenia, BMI≥25, in the Preparation/Contemplation Stages of the Transtheoretic al Model	Design: ABA Baseline: N/R Intervention: 2 months Follow Up: N/R Specific Aims: Examine the feasibility and acceptability of exercise counseling on the psychological mediators of physical activity behaviors and levels of MVPA in obese adults with schizophrenia	F: N/R I: N/R T: N/R T: Gym visits, walking, biking V: N/R P: N/R Measurement: Minutes of MVPA (accelerometry)	Results: -3 participants progressed in the stages of the Transtheoretical Model -PA decreased across all 4 participants, significantly for 1 participant (t=3.26, p<0.05) -Non-significant increases in self-efficacy across all 4 participants (t=0.92, p=0.40) Follow up: -Interviews report participants enjoyed exercise counseling and found it helpful -3 participants self-reported they had increased PA.
Kurti and Dallery, 2013 (1)	Experiment 1: N=6, 5 females, 50-71 years, sedentary	Design: Changing Criterion Baseline: 5-9 days Intervention: 25-65 days Follow Up: None	F: ≥3 days/week I: N/R T: N/R T: Walking V: Step count/day within 5-day block	Results: -All participants reached the goal of 10,000 steps No Follow Up

PHYSICAL ACTIVITY SINGLE-CASE DESIGN QUALITY

		Specific Aims: Test the feasibility, acceptability, and efficacy of an Internet-based intervention to increase walking behavior in sedentary adults	P: >1,000 steps above baseline or current goal/day within 5-day block Measurement: Step counts in relation to money earned	
Kurti and Dallery, 2013 (2)	Experiment 2: N=6, 5 females, 60-67 years, sedentary	Design: Changing Criterion Baseline: 5-9 days Intervention: 25-65 days Follow Up: None	F: ≥ 3 days/week I: N/R T: N/R T: Walking V: Step count/day within 5-day block P: >1,000 steps above baseline or current goal/day within 5-day block Measurement: Step counts only	Results: -5 participants reached the goal of 10,000 steps No Follow Up
Irons et al., 2013	N=7, 6 female, physically inactive undergraduate students, BMI=18.5-29.9	Design: Mixed Methods Baseline: 6-12 days Intervention: 4 weeks Follow Up: 2 weeks post-intervention Specific Aims: Test the feasibility of employing contingency management to determine if a behavioral intervention would be successful in increasing exercise among physically inactive, healthy college students	F: 3 days/week I: 50-85% HR max (2 weeks) T: 5-30+ minutes of treadmill T: Walking/Running on treadmill, free weights V: 5-30+ minutes of treadmill, and free weights P: Weeks 1 and 2 – increase treadmill time by 5 min/session, Weeks 3 and 4 – maintain HR between 50-85% HR max for 30 min/session Measurement: Observed minutes of exercise	Results: -All participants exercised ≥ 30 min for 3 days/week by the end of the study -Significant decrease in body fat % Follow Up: -6 participants self-reported maintaining PA levels above baseline

PHYSICAL ACTIVITY SINGLE-CASE DESIGN QUALITY

McFadden et al.,	N=5, 19.5	Design: Multiple Baseline	F: N/R	Results:
2017	years, all		I: N/R	-Depression levels decreased in 3
	female, mild	Baseline: 10 days	T: N/R	participant
	to severe	Intervention: 2 months	T: Running, walking, cycling,	-Self-reported PA increased in
	Depression,	End Phase: 10 days	swimming, tennis, handball	participants
	insufficiently	Follow Up: 1 month post-	V: N/R	-Overall trends indicate decreases in
	to moderately	intervention	P: N/R	depression across all subjects with
	active			increased PA
		Specific Aims: Examine the effects	Measurement:	Follow Up:
		of a two-month PA counseling	>Self-reported level of PA (Godin	-Depressive symptoms remained lower
		intervention on depressive	Leisure-Time Exercise Questionnaire)	than baseline, while PA levels remained
		symptoms and PA in female	>Step counts via accelerometry	higher
		undergraduate students with		
		depression		
Nijs et al.,	N=5, 18-65	Design: ABA	F: N/R	Results:
2009	years, all		I: N/R	-Significant decrease in time spent doing
	female,	Baseline 1: 1 week	T: N/R	light PA
	Chronic	Intervention: 3 weeks	T: N/R	-No changes in moderate, vigorous, or
	Fatigue	Baseline 2: 1 week	V: N/R	total PA
	Syndrome		P: N/R	
	(CFS),	Specific Aims: Examine the effects		No Follow Up
		of pacing self-management on	Measurement:	
		physical behavior and health status	>Minutes of PA (light, moderate,	
		in patients with chronic fatigue	vigorous, and total)	
		syndrome	>Activity counts (accelerometry)	
Normand,	N=4, ≥18	Design: Mixed Methods	F: N/R	Results:
2008	years, 3 male,		I: N/R	-Step counts increased during
	healthy, non-	Baseline 1: 10-22 days	T: N/R	intervention, decreased during return to
	obese,	Intervention 1: 31-46 days	T: Walking	baseline
	exercise	Baseline 2: 5 days	V: N/R	-No change in weight
	regularly/semi	Intervention 2: 7-15 days	P: Daily step goal increased if average	-All subjects indicated the intervention
	-regularly		step goal from previous week was met	increased PA and found the intervention
		Specific Aims: Evaluate whether a	for at least 4 days	useful
		package intervention could increase		
		daily step counts with suggestions	Measurement: Daily steps	No Follow Up
		of preventing adult weight gain	(accelerometry)	

PHYSICAL ACTIVITY SINGLE-CASE DESIGN QUALITY

Thyer et al., 1984	N=2, 1 male (37 years, IQ=64, unspecified schizophrenia complicated by alcoholism), 1 female (53 years, normal intelligence, paranoid schizophrenia,) , both under medication	Design: ABAB Baseline 1: 7 days Intervention 1: 7 days Baseline 2: 7 days Intervention 2: 7 days Follow Up: 50 days post- intervention Specific Aims: Investigate the effectiveness of a contingency- management program on the exercise behavior schizophrenic patients living in a residential group-home	F: N/R I: N/R T: N/R T: Indoor cycling V: N/R P: N/R Measurement: Miles biked per day	Results: -Distances biked increased in both subjects during the intervention phases compared to both baselines Follow Up: -Distances biked improved for both subjects -Reinforcement intervention was still in operation at follow up
Wysocki et al., 1979	N=12, 20-33 years, 7 male, undergraduate and graduate students, recurring failure to engage in regular exercise	Design: Multiple Baseline Baseline 1: 1-3 weeks Intervention 1: 4-6 weeks Baseline 2: 1 week Intervention 2: 2 weeks Follow Up: 1 year post-intervention Specific Aims: Examine the effectiveness of behavioral contracting on encouraging exercise	F: N/R I: N/R T: N/R T: Running, walking, cycling, swimming, tennis, handball V: N/R P: N/R Measurement: Cooper Points earned by groups of participants	Results -7 subjects aerobic point earnings increased -1 subject failed to meet terms and withdrew during the intervention Follow Up: -7 subjects reported earning more Cooper Points than at baseline

N/R – not reported; study conducted element but did not report

FITT-VP – The FITT-VP Principle; method of prescribing exercise based on the frequency (F) of the activity or exercise, its intensity (I), the time (T) it takes to complete, the type (T) of activity or exercise, the volume (V) of the exercise bouts, and the progression (P) of exercise through time