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BEHAVIOURAL WEIGHT MANAGEMENT INTERVENTIONS IN BARIATRIC SURGERY: A SYSTEMATIC REVIEW AND META-ANALYSIS



Concordia

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INTRODUCTION:	CHARACTERISTICS OF INCLUDED TRIALS:	
Bariatric surgery leads to substantial clinical improvements in	Participant ^a and Study Characteristics	Mean (SD) or n (%)
patients with severe obesity (body mass index [BMI] \geq 40)	Total sample (Mean[SD] 81.1 [53.1]; Range 15–240)	2919
• However verichility in weight loss (NUL) and maintenance is high	Age (Range 32–52.5 yrs) ^a	43 (4.8)
 However, variability in weight loss (wL) and maintenance is high Insufficient WL in ½ patients in first vr post-surgery. 	N Women (Range 12–208) ^a	2298 (79)
 Solve and the second sec	N White (Range 57.5–100) ^a	985 (62)
0 2 50% patients regain weight within 2 yrs post-surgery	Baseline BMI (Range 29.8–51.6 kg/m ²) ^a	42.8 (6.5)
 There is a lack of evidence-based data to inform the usage of 	Baseline weight (Range 81.1–152.7 kg) ^a	118.9 (19.3)
adjunct behavioural weight management (BWM) interventions to	# of RCTs	29 (81)
bariatric surgery	Experimental/Comparator interventions	41/36
AIMS AND HYPOTHESIS:	# of pert operative experimental interventions	25 (41 (27)
1. Evaluate the efficacy of BWM interventions in bariatric surgery:	# of pro- and post operative experimental interventions	25/41 (01)
	Mean postoperative follow up (months) ^b (Pange 1 5–48 months) ^a	5/41 (12) 18 1 (12 8)
2. Provide further evidence on the timing of the most efficacious	BMI = Body Mass Index: ^a Data on age, sex, ethnicity, BMI and weight was not r	provided in all included studies: ^b Four
interventions	preoperative studies did not include postoperative follow-ups.	
METHODS	RESULTS	
		exercise characteristics (N=3C)
• Population: Adults (≥18 yrs) undergoing or having undergone	BWIVI Interventions characteristics (N=41) Com	Active treatments 24 (04%)
bariatric surgery	Macro-component:	\checkmark Usual care: 23(64%): Non-specific
Intervention: Any pre and/or post-operative BWM interventions	Psychosocial-based: 5 (12%)	treatment: 8(22%); Standard care:
Comparator: usual and standard care interventions, wait-list and	 Duration ≥ 3 months: 37 (90%) 	3(8%)
no-intervention controls attention placebo	• Frequency ≥ 1 session/week: 26 (63%) •	Non-active treatments: 2 (6%)
	 Mean total number of session: 34.9 (Range=1-365) 	✓ Wait-list: 1; No-intervention controls: 1
Outcomes: Any clinical and/or adiposity measure of change	Findings for BMI outcome as a function of operative timin	σ
 Meta-analysis focused on weight and BMI 	A. Pre-operative trials	B. Post-operative trials
• Study design: Randomised controlled trials (RCTs), non-randomised	Model Group by Study name Std diff in means and 95% CI SCORE	Study nameStid diff in means and 95% Cl. Lower Upper
controlled trials and controlled before and after studies (CBA)	Lower opper limit limit DELTA of	Campania et al. (2017) -1.830 -0.4411
Elow Diagram	DELTA Camoras et al. (2016) -1.101 -0.209 TET DELTA DELTA DELTA DELTA DELTA CONTRACTORIA DELTA DELTA DELTA DELTA	Galió et al. 1 (2017b) -3.702 -2.332 C Galió et al. 2 (2017b) -2.630 -1.456
Pacards identified through Additional records identified	DELTA Parkin et al. 2 (2012) -0.230 1.307 DELTA Parkin et al. 2 (2012) -1.773 -0.213	Marchesi et al. (2015) -2.060 -0.007 -1.941 -1.334
database searching through through other sources	Random DELTA -0.942 0.306	Coen et al. (2016) -0.277 0.416 Hanveld et al. (2019) -0.296 0.404
Records removed as	POST Bond et al. (2015; 2017)0.204 0.045	•assammigad et al. 1(2017) •0.12 0.804 •bissemmigad et al. 2(2017) •1.577 0.046 •hirring at al. (2017) •1.301 0.323
duplicates (n=3883) ← Records excluded (n=7023)	POST Heinberg et al. (2014) -0.582 0.341	-SaterChaine et al. (2018b) -1.130 0.231 Laudi et al. (2018) -0.698 0.186 Lonet et al. (2019) -1.251 0.020
Searched Databases: With reasons Other language (1); Not bariatric (30); Unit adults (14); Not bariatric (30); Not bar	POST Marcon et al. 1 (2016) -0.760 0.728 POST POST POST POST POST POST POST POST	Aunobjerg et al. (2018b) -0.769 0.322 Njanskin et al. (2012) -0.968 -0.238
PubMed PsychiNFO titles and abstracts Reviews (171); Ineligible interventions Reviews (171); Ineligible interventions	Fixed POST -0.442 -0.035 Post Random POST -0.636 0.146 POST	Muchani Markani Ma Markani Markani Ma
EMBASE (15); Ineligible study designs (2213); Guidelines (144); protocol papers (1); duidelines (144); protocol papers (1);	Fixed Overall -0.522 -0.179 Protect Protect	-0.350 -0.810 -0.138
Scopus Cochrane Cochranee Cochranee Cochranee Cochranee Cochraee	-2.00 -1.00 0.00 1.00 2.00	-0.913 -0.209 -2.00 -1.00 0.00 1.00 2.0
(n=164) with reasons Other language (3); Not bariatric (1);	C. Pre- and post-operative trials SDM = -0.60 (1	95% CI: -0.913 to -0.289); a = -1.84 kg/m ² /95% CI: -2.862 to -0.812)
Independent studies (n=36) Vature interventions (19); Not prospective intervention field (19); Not prospective intervention field (19); Not prospective intervention field	Lower Upper	c - 1.04 kg/m (3370 cl. 2.002 to 0.012)
Postoperative follow-ups synthesis (n=41) (27); No weight/adiposity outcomes (27); No weight/adiposity outcomes (5); No change measure (1); Conf	Creel et al. 1 (2016) -0.523 0.614	
	Creel et al. 2(2016) -1.016 0.133	OB) of all included studies
synthesis (meta-analysis) (1); No new Weight Outcomes (2); (n=36) Posthoc analyses (1); Unable to access full-lext article (1)	Ogden et al. (2015) -0.412 0.212	r ≥ 50% of studies across 5 major domains
Weight M BMI	Fixed -0.370 0.052	
(n=31) (n=29)	-2.00 -1.00 0.00 1.00 2.00	
CONCLUSION: BWM yielded significant WL effects relative to comparators but only when delivered <i>post</i> -bariatric surgery, with a medium effect size.		
• The post-operative period may create an opportunity that favours the engagement and adoption of WL behaviours in patients undergoing bariatric surgery. However, higher		
research standards need to be attained before firm conclusions can be drawn from the extent literature.		
 Recommendations: Structured clearly-defined frameworks and guidelines (e.g., ORBIT model, CONSORT) should be used to improve the development and testing of BWM 		
interventions among patients undergoing bariatric surgery, with post-si	urgical interventions being a key target time.	

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