

Supplementary materials

Table S1. Means and standard deviations (SD) of outcomes at baseline, 4 months, and 12 months by study group.

Outcomes		SWiM-C						Standard advice					
		Mean (SD)						Mean (SD)					
		N	Baseline ¹	N	4-months	N	12-months	N	Baseline ²	N	4-months	N	12-months
Weight (kg)		192	98.5 (21.6)	145	96.3 (22.1)	119	95.7 (22.4)	196	98.1 (25.1)	177	95.5 (22.3)	147	96.4 (25.1)
Depression (PHQ-8)		192	7.6 (5.4)	145	6.1 (5.1)	121	6.0 (5.3)	196	7.8 (5.7)	180	7.0 (5.4)	152	6.8 (5.5)
Anxiety (GAD-7)		192	5.3 (4.9)	145	4.5 (4.3)	121	4.9 (5.0)	196	5.7 (5.1)	180	5.6 (5.2)	152	5.2 (4.9)
Perceived stress (PSS-4)		192	6.5 (2.9)	145	6.3 (2.6)	121	6.0 (3.3)	196	6.6 (3.3)	180	6.3 (3.2)	152	6.3 (3.4)
Psychological flexibility/ experiential avoidance		192	41.7 (14.0)	143	34.4 (14.0)	121	35.7 (14.6)	196	42.1 (14.0)	178	38.5 (14.1)	151	39.1 (15.5)
Eating behaviour	Cognitive restraint	192	32.6 (14.0)	143	38.6 (13.4)	121	35.2 (9.8)	196	32.9 (14.7)	178	33.9 (15.4)	152	34.8 (9.4)
	Uncontrolled eating	192	34.9 (16.0)	143	27.9 (15.7)	121	31.3 (10.4)	196	34.9 (15.4)	178	32.2 (15.9)	152	35.2 (11.5)
	Emotional eating	192	42.5 (15.2)	143	37.7 (14.6)	121	36.0 (21.2)	196	42.5 (15.0)	178	39.4 (14.5)	152	40.2 (21.7)
Volume of total physical activity		171	33.3 (26.7) n = 171	130	37.9 (32.5)	113	47.5 (44.3)	166	35.5 (32.7) n = 166	149	32.7 (31.6)	136	39.1 (41.1)

Wellbeing/capability	19 2	0.80 (0.16)	14 3	0.82 (0.17)	12 1	0.81 (0.17)	19 6	0.79 (0.18)	17 8	0.68 (0.33)	15 1	0.79 (0.18)
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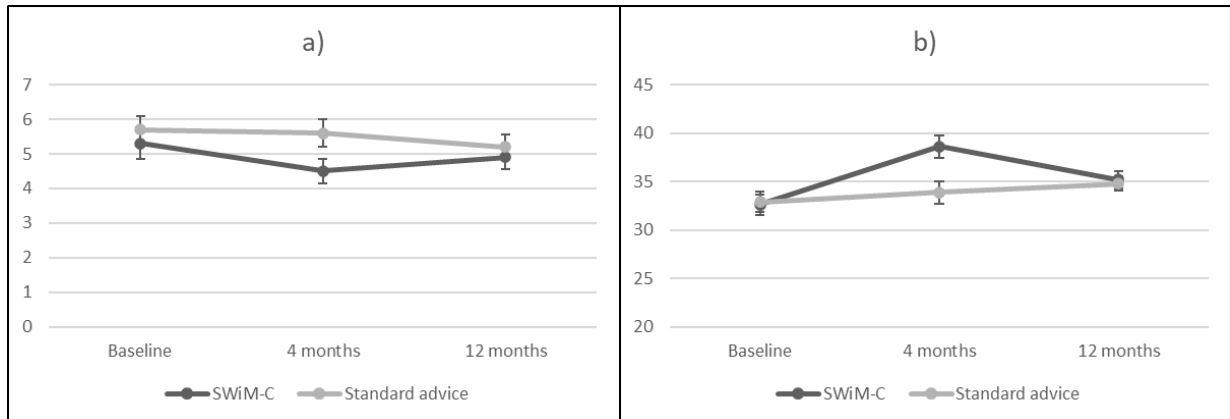


Figure S1. (a) Mean anxiety symptoms as measured using the Generalised Anxiety Disorder questionnaire (GAD-7) and (b) mean cognitive restraint of food intake as measured by the Three Factor Eating Behaviour Questionnaire (TFEQ) at baseline, 4 months and 12 months in the intervention (SWiM-C) group and the standard advice group. Error bars are standard errors.

Table S2. Comparison of participants with and without missing outcome data at 12-month follow-up on demographic characteristics.

	No missing outcome data at 12-month follow-up, N = 245 Mean (SD); n (%)	Missing outcome data at 12-month follow-up, N = 143 Mean (SD); n (%)
Age (years)	51.44 (13.78)	48.36 (13.55)
Sex (male)	56 (22.9%)	28 (19.6%)
Ethnicity (White)	228 (93.1%)	136 (95.1%)
Education (any post-secondary education including university or higher degree or equivalent)	182 (74.3%)	11 (69.9%)
Marital status (single)	41 (16.7%)	26 (18.2%)
Weight (kg)	96.63 (23.15)	101.12 (23.72)
BMI	34.37 (7.6)	35.64 (7.93)
BMI category (BMI $\geq 30\text{kg/m}^2$)	165 (67.3%)	107 (75.4%)

Table S3. Sensitivity analysis assuming data were missing not at random (MNAR) using pattern mixture models. Missing weight data were imputed using multiple imputation by chained equations (MICE) and were then multiplied imputations by a varying factor (increasing imputations by 0% [MAR], 10%, 20%, 30%, [MNAR] or decreasing imputations by 10%, 20%, 30% [MNAR])).

Scenario	Baseline-adjusted difference between SWiM-C and standard advice in change in weight from baseline to 12 months (kg) M (95 % CI)	p
Missing values are 30% smaller than imputed values (MNAR)	-0.66 (-2.24 to 0.93)	0.40
Missing values are 20% smaller than imputed values (MNAR)	-0.71 (-2.44 to 1.02)	0.40
Missing values are 10% smaller than imputed values (MNAR)	-0.76 (-2.65 to 1.13)	0.40
Values are imputed (MAR)	-0.82 (-2.87 to 1.24)	0.40
Missing values are 10% larger than imputed values (MNAR)	-0.87 (-3.10 to 1.36)	0.41
Missing values are 20% larger than imputed values (MNAR)	-0.93 (-3.33 to 1.48)	0.41
Missing values are 30% larger than imputed values (MNAR)	-0.98 (-3.57 to 1.61)	0.41