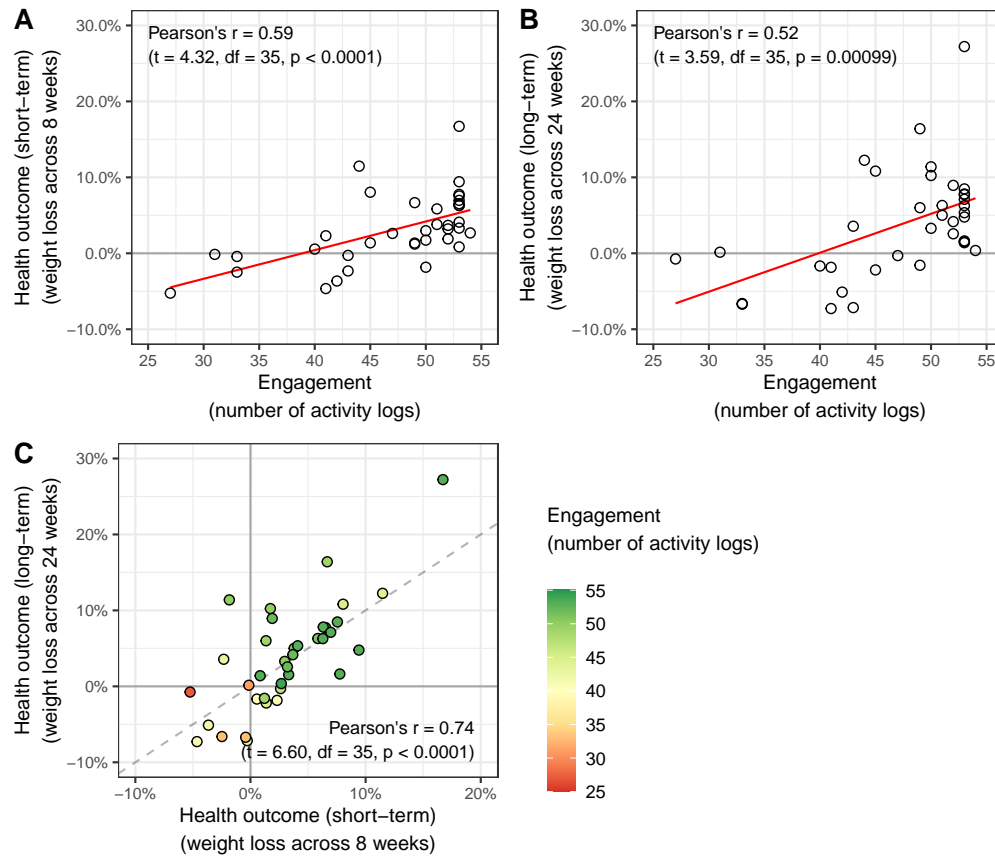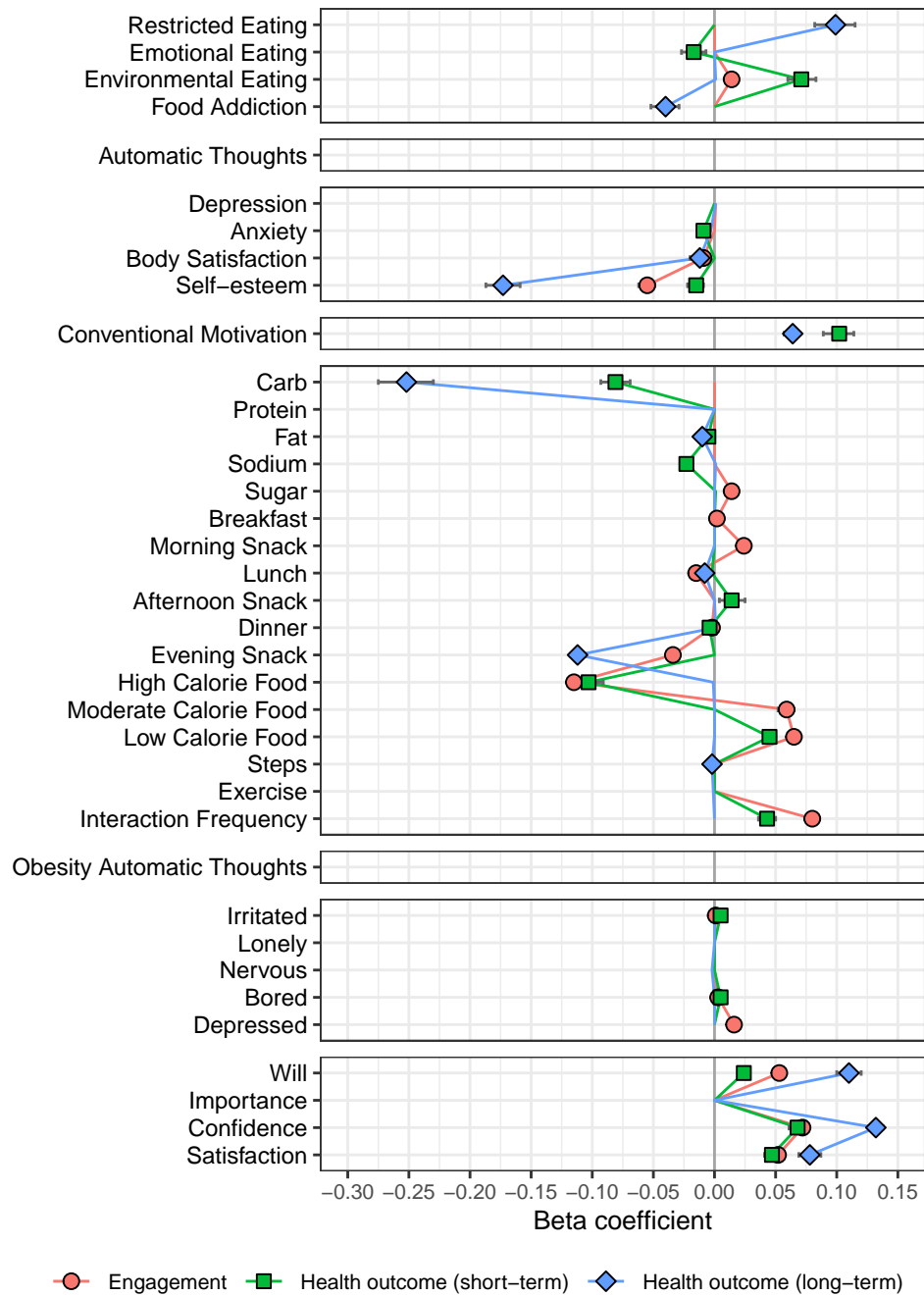# 1 Data

2 Figure 2

3 Run analysis

4 Figure 3

5   Figure 4

6 Figure 5

7 Figure S1

A

Engagement

Number of activity logs

* $\alpha_{min} = 0.08$

B

Health outcome (short–term)

Weight change (8 weeks)

* $\alpha_{min} = 0.15$

C

Health outcome (long–term)

Weight change (24 weeks)

* $\alpha_{min} = 0.53$
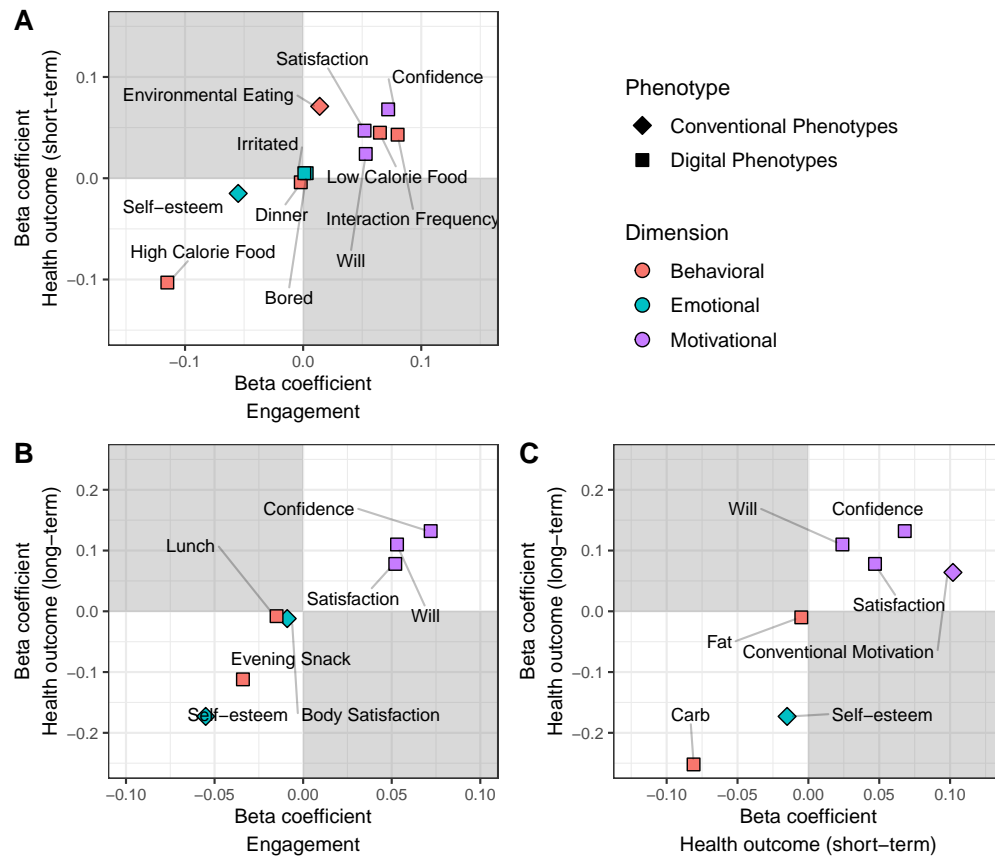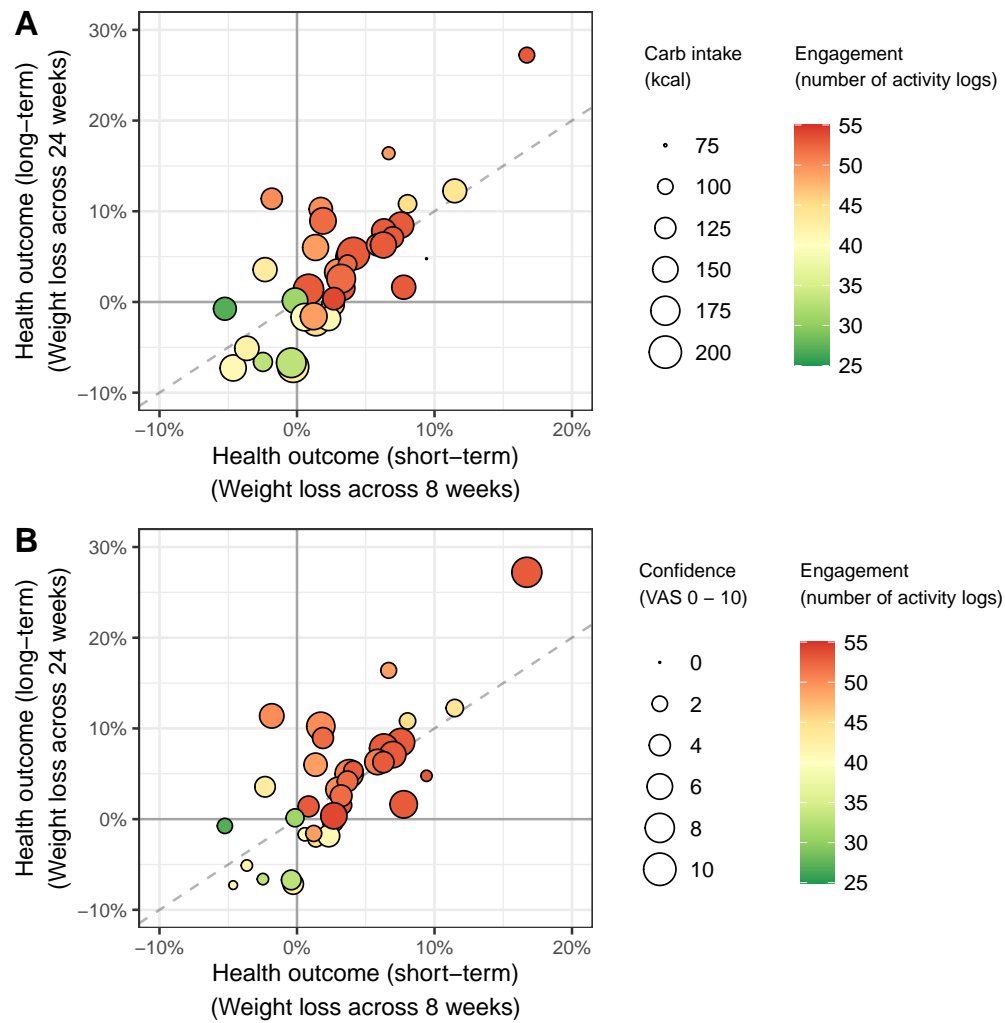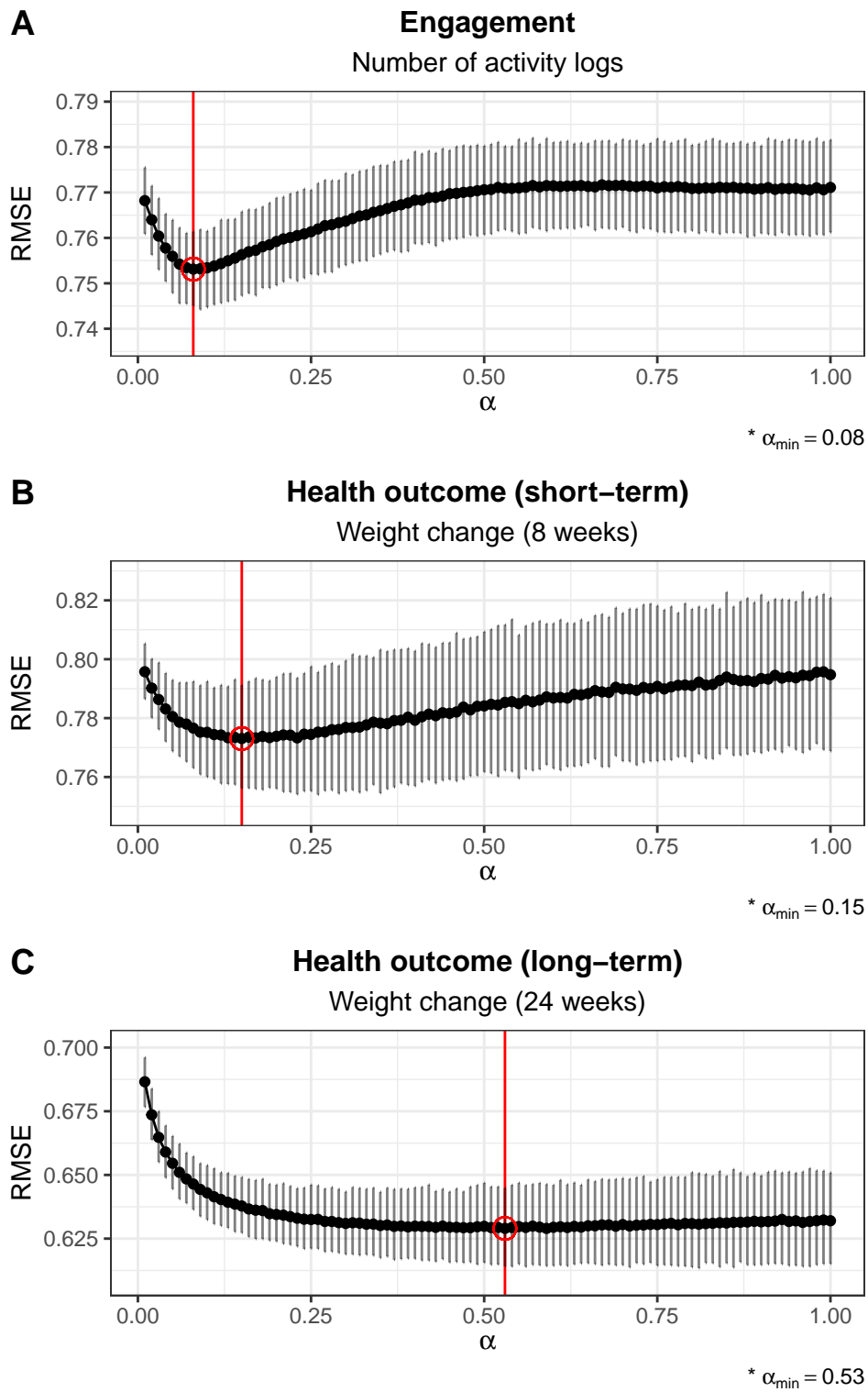
8   Table S1

category	category_sub	variable_name	mean	sd
Conventional Phenotypes	Behavioral	Restricted Eating (DEBQ_RE)	29.811	6.903
Conventional Phenotypes	Behavioral	Emotional Eating (DEBQ_EM)	37.541	9.851
Conventional Phenotypes	Behavioral	Environmental Eating (DEBQ_ENV)	34.757	4.821
Conventional Phenotypes	Behavioral	Food Addiction (YFAS_total)	2.541	1.304
Conventional Phenotypes	Cognitive	Automatic Thoughts (ATQ30)	56.919	21.812
Conventional Phenotypes	Emotional	Depression (KBDI)	13.216	8.035
Conventional Phenotypes	Emotional	Anxiety (TAI)	47.919	10.026
Conventional Phenotypes	Emotional	Body Satisfaction (BSQ8C)	35.838	7.297
Conventional Phenotypes	Emotional	Self-esteem (RSES)	19.649	5.149
Conventional Phenotypes	Motivational	Conventional Motivation (SIMS)	75.973	5.885
Digital Phenotypes	Behavioral	Carb	142.947	26.490
Digital Phenotypes	Behavioral	Protein	49.694	10.596
Digital Phenotypes	Behavioral	Fat	38.462	9.365
Digital Phenotypes	Behavioral	Sodium	2190.524	585.947
Digital Phenotypes	Behavioral	Sugar	39.470	11.424
Digital Phenotypes	Behavioral	Breakfast	201.027	108.331
Digital Phenotypes	Behavioral	Morning Snack	18.282	15.977
Digital Phenotypes	Behavioral	Lunch	402.161	98.560
Digital Phenotypes	Behavioral	Afternoon Snack	56.706	39.972
Digital Phenotypes	Behavioral	Dinner	438.978	120.260
Digital Phenotypes	Behavioral	Evening Snack	67.976	56.610
Digital Phenotypes	Behavioral	High Calorie Food	0.295	0.087
Digital Phenotypes	Behavioral	Moderate Calorie Food	0.479	0.063
Digital Phenotypes	Behavioral	Low Calorie Food	0.179	0.088
Digital Phenotypes	Behavioral	Steps	6485.001	2618.545
Digital Phenotypes	Behavioral	Exercise	8.167	8.140
Digital Phenotypes	Behavioral	Interaction Frequency	9.479	2.344
Digital Phenotypes	Cognitive	Obesity Automatic Thoughts	0.495	0.640
Digital Phenotypes	Emotional	Irritated	46.533	23.390
Digital Phenotypes	Emotional	Lonely	49.433	24.519
Digital Phenotypes	Emotional	Nervous	47.259	23.810
Digital Phenotypes	Emotional	Bored	47.738	24.177
Digital Phenotypes	Emotional	Depressed	47.040	24.274
Digital Phenotypes	Motivational	Will	4.582	2.227
Digital Phenotypes	Motivational	Importance	3.726	2.101
Digital Phenotypes	Motivational	Confidence	4.115	2.196
Digital Phenotypes	Motivational	Satisfaction	4.458	2.399