Closing the intention-behavior gap in physical activity: the moderating effect of

individual differences in the valuation of physical effort

Supplementary Material

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Table S1. Descriptive statistics stratified by gender.

Descriptive statistics	Women (N = 286)		Men (N = 108)	
	Mean (SD)	**Range**	**Mean (SD)**	**Range**
Intention to be active	4.8 (1.5)	1; 7	5.1 (1.8)	1; 7
PES – Approach tendencies	3.6 (0.9)	1.3; 5	3.9 (0.9)	1; 5
PES – Avoidance tendencies	2.4 (1)	1; 5	2.1 (0.9)	1; 5
PES – Relative approach (vs avoidance) tendencies	1.1 (1.8)	-3.5; 4	1.8 (1.6)	-4; 4
Moderate-to-vigorous PA (in min)	269 (291)	0-1380	381 (314)	0-1260
Moderate PA (in min)	140 (165)	0-1200	161 (166)	0-840
Vigorous PA (in min)	129 (186)	0-870	220 (207)	0-840

Notes. SD: standard-deviation; PES; Physical Effort Scale; PA: Physical activity.

Table S1. Results from linear models using moderate-to-vigorous physical activity as the dependent variable and adjusting for age and sex.

Variables	Model 1: PES score = Approach tendencies			Model 2 : PES score = Avoidance tendencies			Model 3: PES score = Approach vs avoidance tendencies		
	β	95CI	p	β	95CI	p	β	95CI	p
Intercept	-0.11	-0.22 – -0.00	.045	-0.11	-0.21 – -0.00	.043	-0.11	-0.22 – -0.01	.039
Intention	0.37	0.27 – 0.48	<.001	0.40	0.30 – 0.50	<.001	0.38	0.27 – 0.48	<.001
PES score	0.21	0.11 – 0.32	<.001	-0.20	-0.29 – -0.10	<.001	0.22	0.12 – 0.32	<.001
Intention × PES score	0.10	0.02 – 0.18	.015	-0.10	-0.18 – -0.03	.008	0.11	0.03 – 0.18	.007
Sex (ref: Female)	0.20	0.01 – 0.40	.041	0.22	0.03 – 0.41	.025	0.20	0.01 – 0.40	.038
Age	-0.02	-0.11 – 0.06	.577	-0.03	-0.11 – 0.06	.527	-0.03	-0.11 – 0.06	.560
R^2	0.28			0.28			0.29		

Note. PES: Physical Effort Scale ; 95CI = 95% confidence interval.

Table S2 Results from linear models using METs as the dependent variable.

Variables	Model 1: PES score = Approach tendencies			Model 2 : PES score = Avoidance tendencies			Model 3: PES score = Approach vs avoidance tendencies		
	β	95CI	*p*	β	95CI	*p*	β	95CI	*p*
Intercept	-0.06	-0.16 – 0.03	0.204	-0.05	-0.14 – 0.04	0.271	-0.06	-0.15 – 0.03	0.202
Intention	0.38	0.28 – 0.49	<0.001	0.41	0.31 – 0.51	<0.001	0.39	0.28 – 0.49	<0.001
PES score	0.23	0.13 – 0.33	<0.001	-0.21	-0.31 – -0.11	<0.001	0.23	0.13 – 0.33	<0.001
Intention × PES score	0.11	0.03 – 0.19	.007	-0.11	-0.18 – -0.03	.005	0.11	0.04 – 0.19	.004
R^2		0.28			0.27			0.29	

Note. PES: Physical Effort Scale ; 95CI = 95% confidence interval.

Table S3. Results from linear models using moderate physical activity as the dependent variable.

Variables	Model 1: PES score = Approach tendencies			Model 2 : PES score = Avoidance tendencies			Model 3: PES score = Approach vs avoidance tendencies		
	β	95CI	p	β	95CI	p	β	95CI	p
Intercept	0.01	-0.10 – 0.12	.836	0.00	-0.10 – 0.10	.975	0.01	-0.10 – 0.11	.913
Intention	0.24	0.12 – 0.35	<.001	0.24	0.14 – 0.35	<.001	0.24	0.12 – 0.35	<.001
PES score	0.08	-0.03 – 0.20	.164	-0.09	-0.20 – 0.02	.099	0.09	-0.02 – 0.20	.107
Intention × PES score	-0.02	-0.11 – 0.07	.662	0.00	-0.08 – 0.09	.936	-0.01	-0.10 – 0.07	.805
R^2		0.09			0.09			0.09	

Note. PES: Physical Effort Scale ; 95CI = 95% confidence interval.

Table S4. Results from linear models using vigorous physical activity as the dependent variable.

| Variables	Model 1: PES score = Approach tendencies			Model 2 : PES score = Avoidance tendencies			Model 3: PES score = Approach vs avoidance tendencies		
	β	95CI	p	β	95CI	p	β	95CI	p
Intercept	-0.10	-0.20 – -0.01	.026	-0.08	-0.17 – 0.01	.075	-0.10	-0.19 – -0.01	.032
Intention	0.39	0.29 – 0.49	<.001	0.42	0.33 – 0.52	<.001	0.39	0.30 – 0.49	<.001
PES score	0.28	0.19 – 0.38	<.001	-0.25	-0.34 – -0.15	<.001	0.28	0.19 – 0.38	<.001
Intention × PES score	0.18	0.11 – 0.26	<.001	-0.17	-0.24 – -0.10	<.001	0.18	0.11 – 0.25	<.001
R^2	0.33			0.32			0.33		

Note. PES: Physical Effort Scale ; 95CI = 95% confidence interval.

Table S5. Results from zero-inflated models using moderate-to-vigorous physical activity as the dependent variable.

| Variables	Model 1: PES score = Approach tendencies			Model 2 : PES score = Avoidance tendencies			Model 3: PES score = Approach vs avoidance tendencies		
	b	95CI	*p*	b	95CI	*p*	b	95CI	*p*
First step of models: Odds of not engaging (vs engaging) in > 0 minutes of physical activity									
Intercept	-2.11	-2.48 – -1.75	<.001	-2.06	-2.45 – -1.73	<.001	-2.09	-2.45 – -1.73	<.001
Intention	-0.82	-1.19 – -0.45	<.001	-0.97	-1.30 – -0.63	<.001	-0.88	-1.23 – -0.52	<.001
PES score	-0.51	-0.90 – -0.12	.010	0.41	0.03 – 0.78	.033	-0.49	-0.87 – -0.10	.013
Intention × PES score	0.20	-0.11 – 0.52	.226	-0.12	-0.41– 0.17	.413	0.16	-0.15 – 0.47	.311
Second step of models: Number of minutes of physical activity for participants with > 0 minutes physical activity									
Intercept	5.70	5.69 – 5.71	<.001	5.71	5.70 – 5.71	<.001	5.70	5.69 – 5.70	.001
Intention	0.32	0.32 – 0.33	<.001	0.35	0.34 – 0.35	<.001	0.32	0.31 – 0.33	.001
PES score	0.16	0.15 – 0.17	<.001	-0.15	-0.15 – -0.14	<.001	0.17	0.16 – 0.18	<.001
Intention × PES score	0.04	0.03 – 0.05	<.001	-0.05	-0.06 – -0.04	<.001	0.05	0.04 – 0.05	<.001

Note. PES: Physical Effort Scale ; 95CI = 95% confidence interval. For the first step of models, negative coefficients should be interpreted as lower odds of engaging (vs. not engaging) in more than 0 minutes of physical activity. For the second step of models, positive coefficients should be interpreted as higher levels of physical activity among individuals engaging in more than 0 minutes of physical activity.

Figure S1. Region of significance of the association between intention and depending on vigorous physical activity, depending on approach tendencies (A), avoidance tendencies (B) and approach vs avoidance tendencies (C).
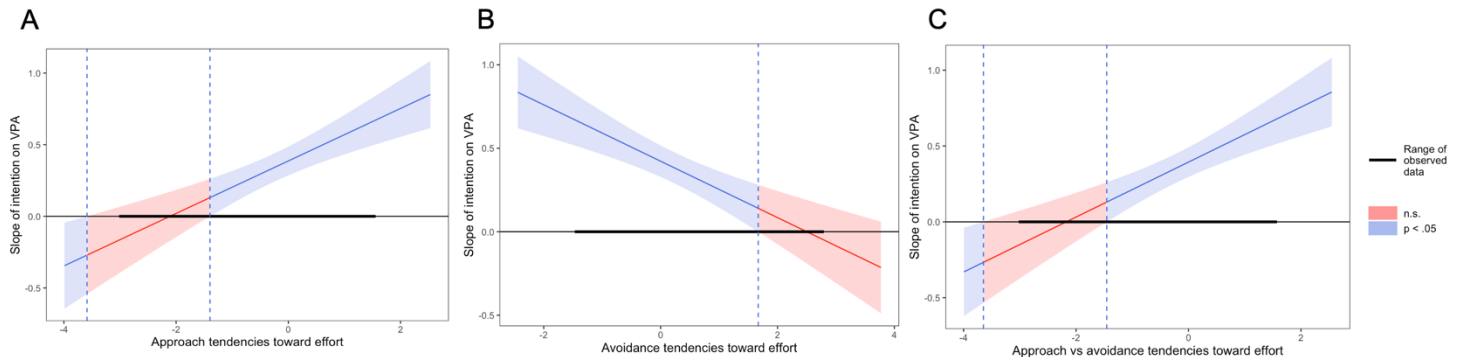
Note. VPA: Vigorous physical activity; n.s: non-significant. All variables were scaled (mean = 0, standard-deviation = 1). The association between intention and vigorous physical activity was significant when the approach tendencies toward effort were above ~2.4 on the five-point Likert scale (i.e., mean scaled sample score - 1.40SD) and not significant below this threshold (Figure 4A). For the avoidance tendencies, the association between intention and physical activity was significant when the avoidance tendencies toward effort were below ~4.0 on the five-point Likert scale (i.e., mean scaled sample score + 1.67SD) and non-significant above this threshold (Figure 4B). Finally, consistent with these results, when using the relative approach (vs avoidance) tendencies score as the moderator, the association between intention and physical activity was significant when this relative score was above -1.5 on a range of -4 to + 4 (i.e., mean scaled sample score -1.45 SD) and non-significant below this threshold (Figure 4C).

Figure S2. Distributions of approach, avoidance tendencies and approach vs avoidance tendencies, depending on gender.
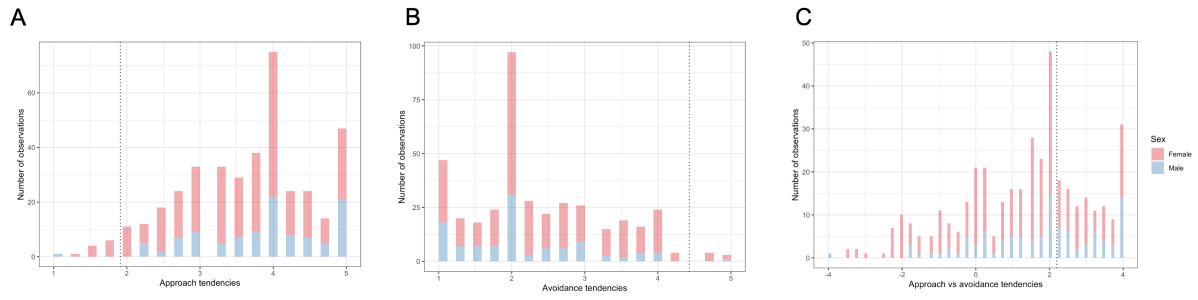
Note. The dotted vertical line represent the threshold at which the association between intention and physical activity becomes significant, according to region of significance analyses.