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Exercise to reduce work-related fatigue among employees: a randomized controlled trial [1]

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1 *Supplementary material*

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Supplementary file I. Per protocol analysis: Means and standard deviations pre (T0) and post (T1) intervention for participants in the EI (N = 31) and WLC (N = 35) group of emotional exhaustion, overall fatigue, need for recovery, sleep quality, sleep quantity, general self-efficacy, work self-efficacy and work ability.

		T0		T1			Intervention effects[b]	
Outcome (theoretical range)	Group	Mean	SD	Mean	SD	d[a]	F	η^2
Emotional Exhaustion (0-6)	EI	3.17	0.81	2.44	1.25	-0.69	**4.42***	**.07**
	WLC	3.58	1.04	3.24	1.31	-0.29		
Overall Fatigue (10-50)	EI	27.16	3.95	24.03	5.63	-0.64	**4.33***	**.06**
	WLC	30.43	6.45	29.14	7.10	-0.19		
Need for Recovery (1-4)	EI	2.45	0.61	2.27	0.62	-0.29	2.78	.04
	WLC	2.84	0.69	2.87	0.98	0.04		

General self-efficacy (1-5)	EI	3.73	0.41	3.78	0.39	0.13	0.93	.01
	WLC	3.48	0.52	3.46	0.63	-0.04		
Work self-efficacy (0-6)	EI	3.97	1.02	4.15	0.95	0.18	0.54	.01
	WLC	3.84	0.98	3.98	1.05	0.14		
Sleep Quality (0-6)	EI	3.75	1.57	3.00	1.81	-0.44	**5.54***	**.08**
	WLC	3.60	1.31	3.71	1.47	0.08		
Sleep Quantity	EI	7.07	0.93	7.13	0.95	0.06	0.37	.01
	WLC	6.99	0.95	6.98	0.94	-0.01		
Work ability	EI	7.89	1.11	8.00	1.16	0.10	**4.58***	**.07**
	WLC	7.36	1.95	6.89	2.18	-0.23		

[a] Within-group Cohen's d

[b] Pre- and post-comparisons: ANCOVA with the post-intervention score (T1) as dependent variable and the baseline score (T0) as covariate.

* $p < .05$, ** $p < .01$

Supplementary file II. Per protocol analysis: means and standard deviations of indicators of cognitive functioning pre (T0) and post (T1) intervention.

		T0		T1			Intervention effects[d]	
Outcome (theoretical range) [cognitive task]	Group	Mean	SD	Mean	SD	d[a]	F	η^2
Self-reported cognitive functioning (0-100)	EI	39.97	12.76	37.23	9.16	-0.25	**6.67***	**.10**
	WLC	44.14	11.74	44.89	12.84	0.06		
Updating [N-back][b]	EI	59.03	16.42	66.93	19.16	0.44	.02	<.01
	WLC	57.02	22.72	65.14	17.36	0.40		
Inhibition [SART][b]	EI	30.48	7.30	32.48	8.79	0.25	0.74	.01
	WLC	33.86	8.24	32.90	8.83	-0.11		
Switching [Matching Task][c]	EI	133.95	172.35	107.18	115.26	-0.18	0.19	<.01
	WLC	103.46	127.15	88.88	134.30	-0.11		
Subjective costs (1-10)								
Fatigue (before)	EI	5.84	1.67	4.73	1.96	-0.61	**7.05***	**.11**
	WLC	5.37	2.10	6.00	1.84	0.32		
Fatigue (after)	EI	6.50	1.87	5.60	2.08	-0.46	1.45	.03
	WLC	6.59	1.86	6.24	1.94	-0.18		
ΔFatigue[e]	EI	0.78	1.88	0.87	1.59	0.05	1.28	.02

	WLC	1.09	1.09	0.31	1.77	-0.43		
Motivation	EI	8.83	1.18	8.73	0.83	-0.10	1.06	.02
	WLC	9.13	0.86	8.60	1.00			
Demands	EI	7.29	1.26	6.32	1.46	-0.71	**5.21***	**.08**
	WLC	7.77	1.00	7.41	1.51	-0.28		
Effort	EI	8.73	0.91	8.83	0.87	0.11	0.78	.01
	WLC	8.76	1.02	8.62	1.24	-0.12		

[a] Within-group Cohen's d

[b] Number of correct responses

[c] Switch cost in milliseconds

[d] Pre- and post-comparisons: ANCOVA with the post-intervention score (T1) as dependent variable and the baseline score (T0) as covariate.

[e] Difference in fatigue before and after the cognitive test battery

* $p < .05$, ** $p < .01$

Supplementary file III. Per protocol analysis: means and standard deviations of indicators of aerobic fitness pre (T0) and post (T1) intervention.

		T0		T1			Intervention effects[b]	
Outcome (theoretical range)	Group	Mean	SD	Mean	SD	d[a]	F	η^2
Aerobic fitness (VO_2max)	EI	31.60	4.40	33.53	5.05	0.41	.02	<.01
	WLC	27.60	5.40	29.86	5.98	0.40		
Subjective costs *(1-10)*								
Fatigue (before)	EI	5.86	1.83	4.66	2.00	-0.63	**7.55****	**.12**
	WLC	6.39	1.89	6.21	1.91	-0.10		
Fatigue (after)	EI	4.72	1.58	3.62	1.90	-0.63	**6.45***	**.11**
	WLC	5.71	1.74	5.32	1.91	-0.21		
ΔFatigue[c]	EI	-1.14	1.96	-1.03	1.88	-0.06	0.01	<.01
	WLC	-0.68	1.52	-0.89	2.38	0.11		
Motivation	EI	8.93	0.84	9.03	0.78	0.12	2.33	.04
	WLC	8.50	1.45	8.50	1.17	<.01		
Demands	EI	4.59	2.04	4.00	1.79	-0.31	**5.34***	**.09**
	WLC	5.00	2.02	5.25	2.08	0.12		

Short of breath	EI	3.52	2.01	3.10	1.76	-0.22	0.67	.01
	WLC	4.14	2.05	3.79	2.08	-0.17		
Effort	EI	9.17	0.76	8.93	0.88	-0.29	1.00	.02
	WLC	8.79	1.07	8.96	0.92	0.17		

[a] Within-group Cohen's d

[b] Pre- and post-comparisons: ANCOVA with the post-intervention score (T1) as dependent variable and the baseline score (T0) as covariate.

[c] Difference in fatigue before and after the aerobic fitness test

* $p < .05$, ** $p < .01$