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Enjoyment during Exercise Mediates the Effects of an Intervention on Exercise Adherence

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Introduction

Regular participation in physical activity is associated with a variety of health benefits and a reduction in diverse chronic diseases. However, empirical studies have shown that about 50% of the participants in exercise programs drop out during the first six months. One strategy to increase regular physical activity would be to promote positive feelings during exercise. However, intervention studies failed to change affective states during physical activity (Rhodes, Fiala & Conner, 2009). Therefore, the objectives of this experimental study were i) to investigate whether the affective states can be influenced by a specific intervention and ii) to link these changes in affective states to exercise adherence.

Figure 1: The objectives of the study

Methods

24 participants in the experimental group and 17 participants in the control group were recruited for this study. The trainers of the experimental group were instructed to promote positive emotions during exercise according to specific principles. These principles were: a) providing positive feedback, b) emphasizing group exercises instead of single exercises, c) increasing the diversity, d) regulation of the intensity, e) incorporating the participants into the process of decision-making, f) increasing the transparency of the training (Jekauc, 2015). The trainers of the control group were instructed to comply with the recommendations of the American College of Sports Medicine (Garber et al., 2011).

Results

The results of the repeated measures analyses of variance provide a significant time by group interaction suggesting that participants of the intervention group increased their affective ratings significantly compared to the control group. The results of the hierarchical regression analyses support the hypothesis that the changes in affective ratings related to exercise mediated the effects of intervention on physical activity adherence. The sobel test indicated that the indirect of the intervention on exercise adherence was significant ($z = 2.4$; $p < 0.01$).

Table 1: ANOVA with repeated measures for the PACES as dependent variable

	SS	*df*	*MSS*	*F*	*p*	η^2
time	2.0	1.1	1.7	0.1	0.76	0.00
time*age	8.0	1.1	7.0	0.5	0.51	0.01
time*group	189.6	1.1	166.0	11.6	< 0.01	0.23
error	628.6	44.5	14.1			

Table 2: Hierarchical regression analysis to predict the exercise adherence

		B	*SE*	β	*t*	*p*
Step 1	Intercept	6.29	0.37		16.9	< 0.01
	Group	-1.40	0.25	-0.72	-5.5	< 0.01
	Age	0.04	0.01	0.61	4.7	< 0.01
$R^2 = 0.492$; adj. $R^2 = 0.465$; $F_{2, 38} = 9.4$; $p < 0.01$						
Step 2	Intercept	0.65	3.77		0.17	0.85
	Group	-0.40	0.45	-0.21	-0.89	0.38
	Age	0.04	0.01	0.61	4.7	< 0.01
	PACES t1	0.01	0.03	0.10	0.08	0.94
	PACES t2	-0.63	0.09	-0.21	-0.74	0.47
	PACES t3	0.14	0.08	0.52	1.82	0.08
$R^2 = 0.551$; $\Delta R^2 = 0.059$; $\Delta F_{3, 35} = 1.5$; $p = 0.224$						

Discussion and Conclusion

This study provides evidence that affective states during exercise can be systematically influenced to increase physical activity adherence. Principles on how to increase positive affective judgments related to exercising can be drawn from this study and eventually be used in order to promote regular physical activity among a large part of the population. Further experimental studies are needed to find out which aspect of the intervention was effective.

References:

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