Need for volition in the course of action?
Coping with self-regulatory difficulties in exercise goals

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UQTR Université du Québec à Trois-Rivières — Savoir. Surprendre.

Background & purpose

- There is increasing evidence that difficulty to maintain regular physical activity (PA), despite strong intention, is caused by depleted self-regulatory resources (Hagger et al., 2010)
- As fatigue, other obligations and higher priorities are the most reported obstacles against PA (Rhodes & Horne, 2013), Exercising Against Conflicts, Temptations and Ego-Depletion appears to be the main challenge between intention and action (Chamberland et al., 2013)

- Choosing an activity that is intrinsically rewarding (Ryan et al., 2009), planning ahead (Gollwitzer, 1999) and acting out of habit (Aarts, 2007) are efficient ways to spare self-regulatory resources on the short and long term
- Purpose: These constructs having only been tested on behavioral performance, with little regard to concrete self-regulatory difficulties (SRD), this study aims to explore how they interact together in the prediction of SRDs and PA behaviour

Methods

- Prospective design, two waves over two months
- Participants : 531 amateur runners (208 men, 323 women) taking part in a 5/10k or 21/42k race at t1 (m. age = 37.3 years, S.D. = 10.3)
- Analysis: Path model with bootstrapping (5000)
- Exogenous variables (t1) :
  -Autonomous/Controlled motivation from BREQ-II (Markland & Tobin, 2004) w/integrated reg (McLachlan et al.,2011)
  -Past Strenuous/moderate PA (Godin & Shephard, 1997)

- Endogenous variables (t1):
  - SRD (EXACTED scale, Chamberland et al. 2013)
  - Exercise habit (Chamberland et al. 2012)
  - Barrier self-efficacy (Garcia & King, 1991)
  - Intention to maintain 3x/week (Ajzen, 1991)
  - Action & Coping planning (t2) (Sniehotta et al., 2005)
- Endogenous outcome variables (t2):
  - SRD (EXACTED scale, Chamberland et al. 2013)
  - Strenuous/moderate PA (Godin & Shephard, 1997)
- Mediation by SRD (t2) also tested

Proposed path model to self-regulatory difficulties and PA behaviour
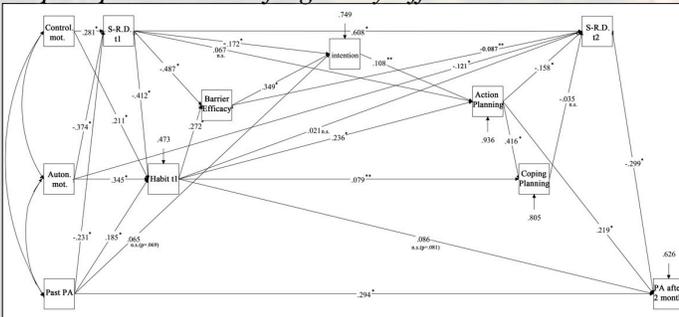
Model fit indices: $\chi2$ (25 dl) = 33.73, p= .1139 / RMSEA = 0.026, 90% C.I. (.00 - .046)
CFI = 0.995 / TLI = 0.990 / SRMR = 0.023
STDYX coefficients shown * Significant at p<.001 ** Significant at p<.05

Correlations, means and standard deviations and variance explained

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. Autonomous m.	--										
2. Controlled m.	0.083	--									
3. Past PA freq.	.226*	-0.004	--								
4. Habit	.570*	.135*	.393*	--							
5. Self-reg. diff T1	-.403*	.251*	-.317*	-.557*	--						
6. Barrier self-eff.	.393*	-0.077	.274*	.543*	-.638*	--					
7. Intention	.243*	-0.038	.215*	.278*	-.415*	.476*	--				
8. Action planning	.177*	0.074	0.059	.228*	-.109*	.186*	.146*	--			
9. Coping planning	.135*	.094*	0.048	.174*	-0.071	.126*	0.037	.434*	--		
10. Self-reg. diff T2	-.420*	.129*	-.251*	-.475*	.719*	-.544*	-.385*	-.271*	-.170*	--	
11. PA freq 2 months	.260*	0.062	.337*	.416*	-.332*	.345*	.276*	.337*	.145*	-.474*	--
Mean	10.16	1.84	36.36	12.60	6.27	73.93	5.45	18.83	10.18	6.77	29.58
S.-D.	1.58	1.10	14.29	2.73	2.26	14.77	0.838	7.71	6.3191	2.75	15.85
R^2 of endogenous v.	--	--	--	.527	.294	.458	.251	.064	.195	.572	.374

* Significant p< 0.01.

- The proposed model adequately fitted the data and explained 37,5% of PA behaviour at t2, with SRD (t2) accounting for 6,7% additional variance

Discussion, limits and conclusion

- Controlled motivation is involved with SRD at t1
- Autonomous motivation is negatively correlated with SRD at t1 and positively correlated with habit at t1
- Results suggest that autonomous motivation, barrier self-efficacy and action planning directly prevent SRD
- SRD (t2) mediated action planning (B= .10, p<.001, CI .06-.15) and autonomous motivation (B= .36, p=.001, CI .19-.56) effects on PA (t2)
- Coping planning did not prevent SRDs and may have different role in behavioral maintenance (i.e. habit reg.)

- Baseline planning levels were not assessed
- Highly salient achievement goals at t1 only may explain the absence of direct habit (t1) effects on SRD (t2) in this particular sample
- These results shed light on potential optimal and suboptimal mediators of motivational and volitional predictors of PA behavior
- The mediating role of habit and SRD should be assessed in a 3 time-points design, where they are measured in the medial time-point

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Background: There is increasing evidence that difficulty to maintain regular exercise, despite strong intention, is caused by depleted self-regulatory resources (Hagger et al., 2010). Choosing an activity that is intrinsically rewarding (Ryan et al., 2009), planning ahead (Gollwitzer, 1999) and acting out of habit (Aarts, 2007) are efficient ways to spare self-regulatory resources on the short and long term. This study aims to assess the interplay between these constructs in the prevention of self-regulatory difficulties. **Methods**: Over two months after a race event, 531 adult runners completed a questionnaire measuring self-determined (incl. integrated) motivation, barrier self-efficacy, exercise habit, action and coping planning and self-regulatory difficulties in exercise goals (Chamberland et al., 2013). **Findings**: A path analysis suggested that autonomous motivation, barrier self-efficacy, action planning and habit prevent self-regulatory difficulties. Interestingly, a relationship between coping planning and habit appeared when ongoing maintenance was assessed at t2, although absent shortly after the race (t1) when habit was at its peak. **Discussion**: These results highlight the temporal interplay between motivational and cognitive constructs, and underline goal-dependency of habit and self-regulatory coping in autonomously motivated and habitual exercisers.

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--- Please inquire for copies of the UGHM/RACER habit module and the EXACTED scale

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