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How to assess the frequency and efficacy of emotion regulation techniques? Validation of the ANPERT

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PRINCIPAL AIM

To develop an inventory assessing the frequency and perceived efficacy of the strategies that people use to manage positive and negative affective states, and to assess its psychometric properties.

THEORETICAL BACKGROUND

The importance of emotion regulation (ER) is widely recognized in the fields of physical and mental health, and psychopathology [1-3]. It appears as a central and transdiagnostic characteristic of psychological problems and mental disorders [3-7].

ER refers to quite a heterogeneous set of processes by which affective states are modified in their occurrence, dynamic, latency, rise time, magnitude, duration, or in the offset of their response in behavioral, experiential, or physiological levels [8]. It involves at least rudimentary intentions and goals, as well as overt, effortful and controlled behavior and attention.

Existing instruments and why the ANPERT?

A number of instruments have been developed to assess emotion regulation, for example the Emotion Regulation Questionnaire (ERQ) [9], the Difficulties in Emotion Regulation Scale (DERS) [10], the Cognitive Emotion Regulation Questionnaire (CERQ) [11], the Emotion-Regulation Skills Questionnaire (ERSQ) [12], or the Regulation of Emotions Questionnaire [13]. Some others focus strictly on the regulation of positive affective states (*e.g.* Positive up-regulation activities questionnaire [14], Savoring Beliefs Inventory [15], Responses to Positive Affect questionnaire [16]).

We wanted to develop an instrument that could assess a broad spectrum of regulation behaviors, sufficiently detailed also to be a tool in the context of psychological intervention, with the opportunity to distinguish between positive and negative affective regulation and to explore the differences between the frequency estimations of regulation behaviors compared with their perceived effectiveness.

DESCRIPTION OF THE ANPERT

The inventory is theory-based and refers to a broad spectrum of behavioral (including bodily), cognitive, and social emotion regulation strategies which can be used to regulate negative and positive affective states.

The suggested emotion regulation strategies are circumscribed, operationally described and accessible for training.

Each scale is made of 3 to 5 items, with a double assessment: frequency and perceived efficacy of the respective regulation behavior. ER scale and response are illustrated by a small concrete example.

Five-level Likert-scale varying from 0 (“not at all” or “not at all effective”) to 4 (“very frequently/regularly” or “very effective”).

The “negative affect regulation part” consists of 64 items, and the “positive affect regulation part” of 54 items. The questionnaire was developed in French.

	Dimensions	N	Item examples
A	Acting on the situation/event, by actively influencing it	4	Influence some elements of the situation helping to resolve the problem Influence the situation by anticipating to better handle its consequences
B	Acting on the situation/event, by actively avoiding / withdrawing from it	4	Withdraw from the situation / Leave the situation behind / go away Avoid the situation/event or some of its consequences
C	Searching (further) information about the situation/event	4	Look for information to better understand the situation Clarify the events or what influenced my experience
D	Suppressing information about the situation/event	4	Hold back / in distance information about the situation (blunting) Think about other stuff / things
E	Changing initial intentions	3	Change plans to adapt them to the situation Develop / express another plan / goal
F	Adapting goals / accepting the situation	3	Put up with the situation and what it means Focalize on changes of motivation
G	Re-evaluating / reframing the situation/event	4	See situation in another light See what I could learn from the situation
H	Auto-verbalizing positively	4	Speak to yourself in an encouraging manner Remember helpful words and phrases Remember what you’ve done successfully in other situations
I	Referring to / making use of social support	4	Address oneself to somebody related (a friend) for help Address oneself somebody to share the situation and my feeling
J	Intaking substances / drugs / medication	5	Drink an alcoholic beverage Smoke a cigarette Eat something (sweet, salty) Take a substance (sedative, stimulant)
K	Relaxing physically and mentally	5	Breathe comfortably and deeply Adopt a more comfortable and agreeable body position Let sensations, impressions act on you without influencing them
L	Being physically active / physical activation/ activity	4	Change body posture Move, walk around Do something, a little effort, action
M	Doing specific relaxing techniques	4	Practice muscle/progressive relaxation or applied relaxation Practice meditation

Figure 1. Structure of behaviors as integrated in the items

METHOD

The studies regroup 495 non clinical participants (67% women and 33% men) between 20 and 63 years old (M= 35.1; SD=12.3). Socio-economic status is quite high. Participants are French-speaking, and come from higher education (64% having attended university or higher professional school). 62% are active professionals, and 29% are students. All participants filled in online the ANPERT and other questionnaires related to ER, well-being and psychological symptomatology. Analyses were made with SPSS 23 and AMOS [17].

RESULTS

Descriptive results of the ER scales:

The most frequent ER strategies– negative and positive affect regulation taken together – are re-evaluation (2.99), adapting goals (2.99), searching information (2.84) and active influence (2.81). The most frequently chosen are also the most effective: re-evaluation (3.18), adapting goals (3.07), searching information (3.07) and active influence (3.02). Lower efficacy is observed in suppressing information, avoiding, and substance intake.

	Negative affect		Positive affect	
	frequency	effectiveness	frequency	effectiveness
A: Acting by influencing	2.74 (0.80)	2.89 (0.72)	2.87 (1.08)	3.15 (0.95)
B: Acting by avoiding	1.67 (0.82)	1.76 (1.03)		
C: Searching information	3.17 (0.81)	3.22 (0.76)	2.50 (1.02)	2.92 (0.95)
D: Suppressing information	2.23 (0.84)	2.21 (0.89)		
E: Changing intentions	2.66 (0.79)	2.86 (0.76)	2.74 (0.94)	3.00 (0.85)
F: Adapting goals	2.76 (0.75)	2.83 (0.83)	3.20 (0.90)	3.29 (0.84)
G: Re-evaluating	2.92 (0.83)	3.13 (0.79)	3.05 (0.90)	3.21 (0.81)
H: Auto-verbalizing	2.81 (0.93)	2.96 (0.85)	2.52 (1.11)	2.86 (1.02)
I: Social support	2.60 (0.99)	2.85 (0.89)	2.79 (0.99)	3.02 (0.90)
J: Intaking substance	1.44 (0.82)	1.58 (0.97)	1.40 (0.82)	1.76 (1.04)
K: Relaxing physically and mentally	2.49 (0.83)	2.78 (0.84)	2.49 (0.95)	2.93 (0.89)
L: Motor activity	1.40 (1.00)	2.37 (1.08)	1.25 (1.06)	2.23 (1.19)
M: Doing specific relaxing techniques	2.69 (0.88)	2.99 (0.83)	2.52 (0.98)	2.87 (0.94)

Figure 2. Means and standard deviations of the registers

Reliability

The observed Cronbach’s alpha indicates a good or acceptable reliability for the majority of the scales. Only “changing initial intentions” (negative affect), and “substance intake” (frequency scales for negative and positive affect) show lower consistencies with an alpha between .65 and .69.

Table 1. Internal consistency of the registers

Dimensions	A: Acting by influencing	B: Acting by avoiding	C: Searching information	D: Suppressing information	E: Changing intentions	F: Adapting goals	G: Re-evaluating	H: Auto-verbalizing	I: Social support	J: Intaking substance	K: Relaxation time	L: Motor activity	M: Relaxing techniques
Number of items	4	4	4	4	3	3	4	4	4	5	5	4	4
Negative affect													
- frequency	.71	.71	.87	.73	.65	.72	.80	.86	.85	.66	.70	.83	.78
- effectiveness	.71	.80	.88	.76	.69	.74	.82	.85	.82	.78	.80	.87	.79
Positive affect													
- frequency	.86	–	.87	–	.77	.84	.82	.89	.85	.67	.77	.87	.80
- effectiveness	.88	–	.86	–	.81	.81	.79	.89	.85	.78	.81	.90	.81

Dimensionality of the scales: Confirmatory factor analyses

The analyses yield a very clear model structure identified by confirmatory factor analyses, presenting good model fit indices.

Table 2. Goodness of fit indexes for the confirmatory factor analyses

Affects		*chi2/dl*	*TLI*	*CFI*	*RMSEA*	*Confidence interval*
Negative	frequency	1.89	.89	.90	.043	.040-.045
	effectiveness	1.74	.91	.92	.039	.036-.042
Positive	frequency	1.95	.93	.94	.044	.041-.047
	effectiveness	1.91	.93	.94	.043	.040-.047

CONCLUSION

The ANPERT:

- Proposes clear-cutting, circumscribed and operational behavior categories, sufficiently detailed, to be assessed and trained (intervention approach).
- Gives the opportunity to distinguish positive versus negative affective regulation and to explore the differences between the frequency estimations of regulation behaviors compared with their perceived effectiveness.
- Permits to assess a broad spectrum of regulation behaviors.
- Confirmatory factor analyses yield a clear model structure of the proposed strategies, presenting good model fit indices. A plausible second order structure with four factors appeared [18].

Limits:

- Participants may have limited insight into their own emotion regulatory tendencies [19], and some regulation is made without conscious awareness or intent.
- Duration for the administration

DISCUSSION

Regarding the importance of emotion regulation in mental and physical health, it seems central to benefit from an instrument like the ANPERT to assess the dimensions embedded in emotion regulation – which describe individual regulation profiles and the possibility of developing adapted training modules.

Emotion regulation being a highly relevant challenge in numerous domains of health and well-being [1,2,20], the clinicians need information about the patient’s tendencies to face and regulate his affective states, to detect strategies which are lacking, are overrepresented or less effective, respectively dysfunctional and counterproductive.

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