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Introduction & Aims

Psychological approaches to treat patients with chronic low back pain (CLBP):

- Graded in vivo exposure (EXP) → Elements: Individual fear hierarchy and exposure
- Cognitive behavioral therapy (CBT) → Elements: Cognitive and behavioral interventions to increase coping

Aim: Evaluate the effect of isolated psychological pain treatment elements in a Single-Case Experimental Design

Method

Assessments:

Primary: Baseline (7-26 days), treatment (23-44 days), and 6-months follow-up (11-30 days)

Secondary: pre-treatment, post-treatment, 6-months follow-up

EXP	CBT
Matching pairs (gender, age, disability)	
1 female, 58	female, 56
2 male, 57	male, 51
3 female, 58	female, 67
4 male, 58	male, 62
5 female, 41	female, 55
6 male, 58	male, 58
Treatment elements (10 sessions à 50 minutes, 2x per week)	
I. Psychoeducation (PE)	I. Psychoeducation (PE)
1	Anamnesis
2	Biopsychosocial model
3	Fear avoidance model
4	Fear hierarchy
II. Exposures (EX)	II. Behavioral elements (BE)
4	Graded activity 1
5	Exposure 1
6	Exposure 2
	III. Cognitive elements (CE)
7	Exposure 3
8	Exposure 4
9	Exposure 5
10	Recapitulation of treatment elements

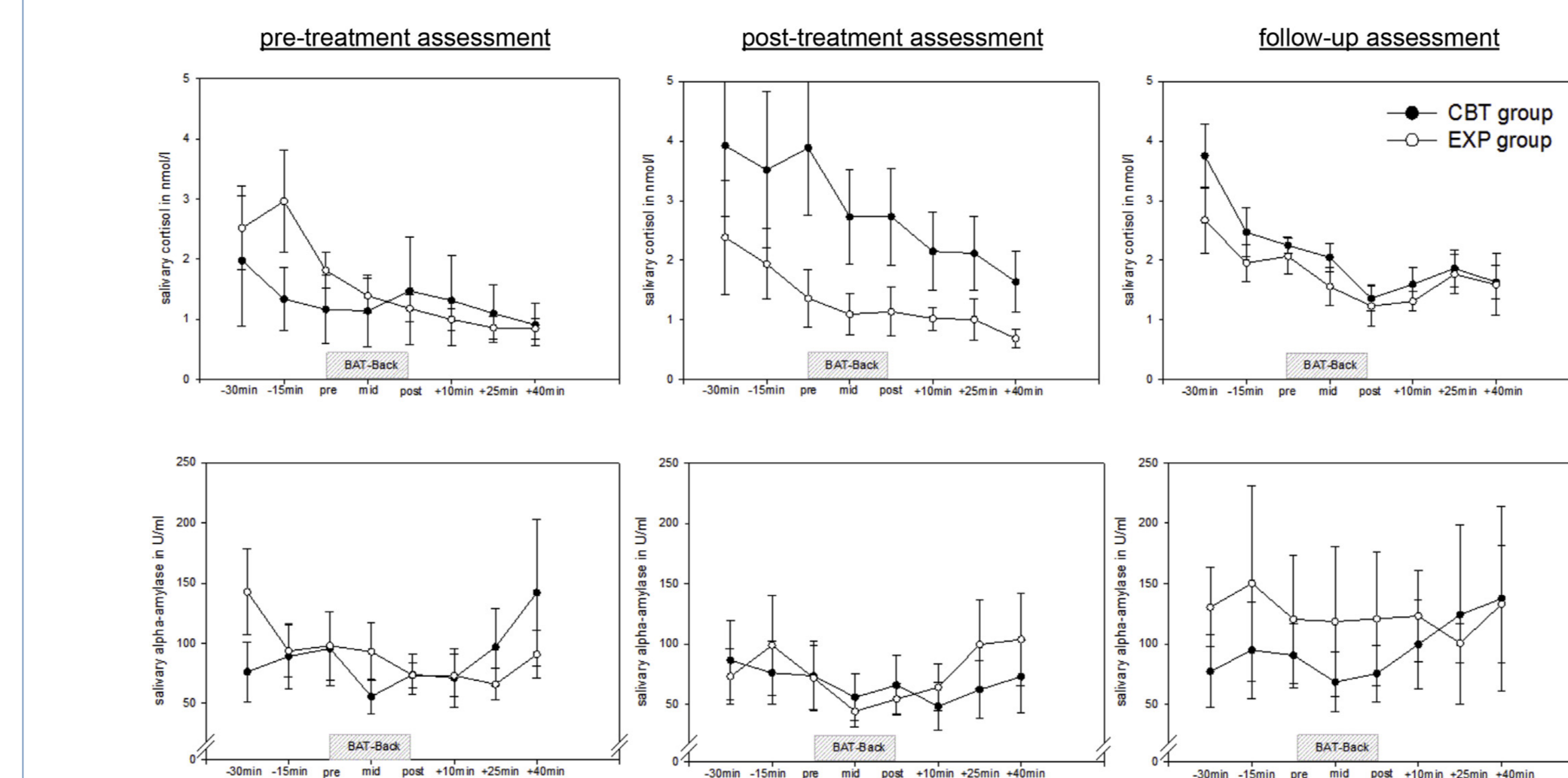
Results

Single-case meta-analysis (SCMA) pooling p-values based on Edgington's additive approach

	EXP			CBT			
	I. PE	II. EX	FU	I. PE	II. BE	III. CE	FU
Symptoms							
Pain intensity (now)	-	-	-	-	-	-	-
Pain intensity (average)	-	-	-	-	-	-	-
Pain perception	-	≤ .05	-	-	-	-	-
Disability	-	-	-	-	-	-	≤ .05
Expectation	-	-	-	-	-	-	≤ .05
Harmfulness	-	≤ .05	-	-	-	-	-
Treatment processes							
Self-efficacy	-	≤ .05	-	-	-	-	-
Positive thoughts	-	-	-	-	-	-	-
Acceptance	-	≤ .05	-	-	-	-	-
Exposition	-	-	≤ .05	-	-	-	-
Cognitive anxiety	-	-	-	-	-	-	-
Catastrophizing	-	-	-	-	-	-	-
Body confidence	-	≤ .05	-	-	-	-	-

Note. EXP: Exposure condition, CBT: Cognitive-behavioral therapy condition, PE: Psychoeducation, EX: Exposure, FU: Follow-up, BE: Behavioral elements, CE: Cognitive elements, - : not significant

Mean values and standard errors of salivary cortisol and salivary alpha-amylase during Behavioral Avoidance Test (BAT)



Results

Overview of the reliable change and clinically significant change of the secondary assessments.

	EXP	CBT
Post-treatment		
# of patients with RCI (%)	3x 16.7%	3x 16.7% 2x 33.3%
# of patients with CSC (%)	1x 16.7% 8x 33.3% 1x 66.7%	4x 16.7% 1x 33.3%
Follow-Up		
# of patients with RCI (%)	4x 16.7% 1x 33.3%	3x 16.7% 2x 33.3%
# of patients with CSC (%)	6x 16.7% 2x 66.7% 1x 66.7%	5x 16.7% 1x 33.3%

Note. RCI: Reliable Change Index, CSC: Clinically Significant Change

Conclusion and further directions

Summary of the main results

EXP → Immediate middle-to-large effects

CBT → Delayed small-to-middle effects

EXP group presented lower cortisol levels at post-treatment than the CBT group.

- Exposure was the most effective intervention offered for these CLBP patients and elevated pain-related fear.
- Both treatments revealed "sleeper effects" at follow-up.

Clinical recommendations

- Integration of exposure elements in CLBP therapy might raise its efficacy.
- Psychoeducational sessions might be unnecessary or need to be adapted.

Reference and posterlink

Schemer, L., Vlaeyen, J. W. S., Doerr, J. M., Skoluda, N., Nater, U. M., Rief, W., & Glombiewski, J. A. (2018). Behaviour Research and Therapy Treatment processes during exposure and cognitive-behavioral therapy for chronic back pain: A single-case experimental design with multiple baselines. *Behaviour Research and Therapy*, 108(July), 58-67. <http://doi.org/10.1016/j.brat.2018.07.002>



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