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Examining the “*open response style*” of Acceptance and Defusion processes in mediating pain interference and psychosocial adjustments to pain management



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ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ



ΕΥΡΩΠΑΪΚΗ ΕΝΩΣΗ



ΚΥΠΡΙΑΚΗ ΔΗΜΟΚΡΑΤΙΑ

Το έργο συγχρηματοδοτείται από την Ευρωπαϊκή Ένωση (ΕΤΠΑ) σε ποσοστό 80% και από εθνικούς πόρους της Ελλάδας και της Κύπρου σε ποσοστό 20%.

- ✓ Primary aim of ACT for chronic pain is to increase Psychological Flexibility (McCracken & Morley, 2014)
 - ✓ PF definition: Persist or change behavior with a conscious and open contact with private experiences, based on what the situation affords and according to one's goals and values (Hayes et al, 2006; 2012)
- ✓ Significant positive treatment outcomes in terms of increasing functionality and decreasing pain-avoidance behaviors across a range of settings & patient samples, maintained for as long as 3 years (Veehof et al., 2011; Vowles et al., 2011; for a review Vowles & McCracken, 2014)
- ✓ Higher PF associated with improved patient functioning and improved quality of life (for a review McCracken & Morley, 2014)

Contact with the Present Moment

Acceptance

Values

Psychological Flexibility

Defusion

Committed Action

Self as Context

Courtesy Steven Hayes, (2012)

Open

Contact with the
Present Moment

Acceptance

Values

Psychological
Flexibility

Defusion

Committed
Action

Self as
Context

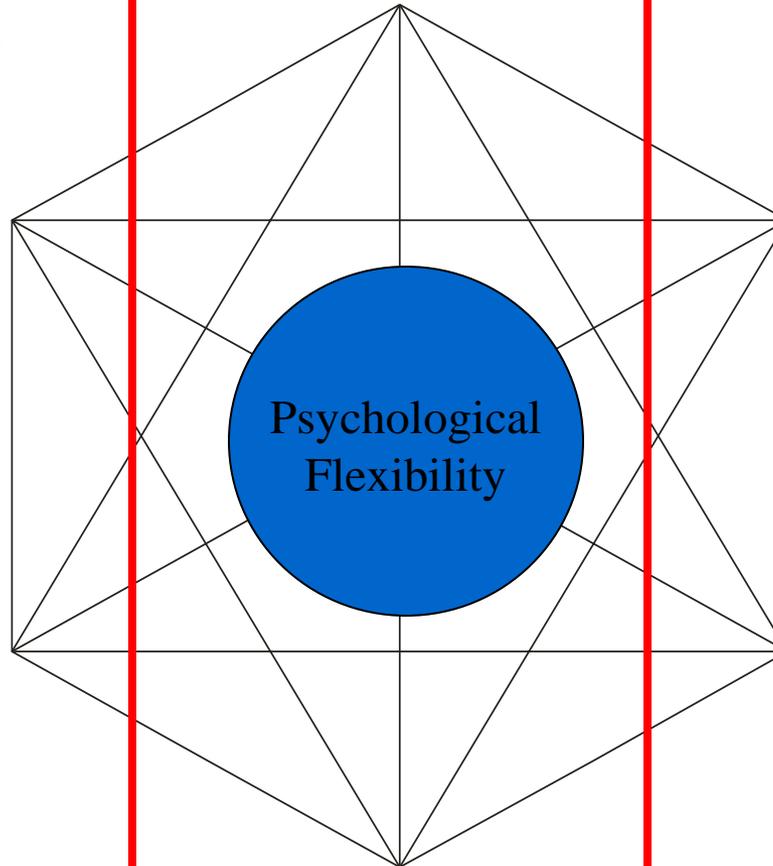
Courtesy Steven Hayes,
2012)

Centered
and
Aware

Contact with the
Present Moment

Acceptance

Values



Defusion

Committed
Action

Self as
Context

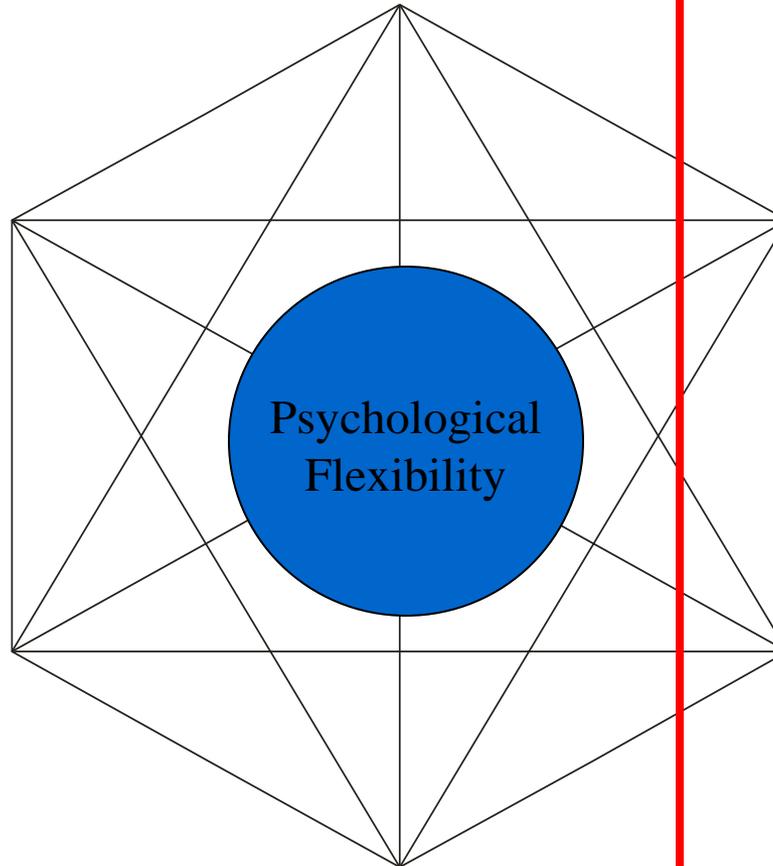
Courtesy Steven Hayes,
2012)

Contact with the Present Moment

Actively Engaged

Acceptance

Values



Defusion

Committed Action

Self as Context

Courtesy Steven Hayes, 2012)

- ✓The “*open response style*” is associated with optimal changes such as better psychological, physical and social function in relation to chronic pain (McCracken & Eccleston, 2003;McCracken, Barker, & Chilcot, 2013).
- ✓The majority of studies examining acceptance and cognitive fusion processes have used correlation and regression statistical methods.
- ✓Limitations in using linear regression methodology
- ✓More reliable statistical approaches are necessary, such as formal tests of mediation and structural equation modelling (SEM) (Vowles et al., 2014a, 2014b).

Aims

1. To evaluate the mediating effect of cognitive fusion and acceptance comprising the “open” response style, between pain interference and pain severity, depression, anxiety and avoidance of pain.
2. To evaluate the mediating effect of the psychological inflexibility of pain (as a theoretical latent construct) between pain severity and pain interference, depression, anxiety and pain acceptance

Methods

- ✓ A heterogeneous sample of 160 Greek speaking chronic pain patients in Cyprus and Crete
- ✓ The sample was recruited in partnership with NGOs providing support of chronic pain patients and local primary care centers
- ✓ 4 month recruitment, from Feb. to May 2013 in the Republic of Cyprus and in the island of Crete, Greece
- ✓ Pain psychoeducational workshops offered to participants completing the questionnaire packets.
 - ✓ Interested participants were offered to enter an ACT based intervention program
- ✓ All participants provided written informed consent prior to completing study questionnaires

- ✓ **Demographics** (e.g. age, gender, marital, occupational status, education level, time since pain onset (years) and chronic pain diagnosis).
- ✓ **The Chronic Pain Acceptance Questionnaire (CPAQ-8;** McCracken, 2004b; Vasiliou et al., 2014). 8 items assessing levels of pain acceptance in two subscales: a) activities engagement and b) pain willingness in a 7-point Likert-style scale. Higher scores indicate higher acceptance. Chronbach's $\alpha = .76$.
- ✓ **Psychological inflexibility in pain scale (PIPS-II;** Wicksell, et al, 2010; Vasiliou et al., 2014). An 12-items instruments measuring psychological inflexibility related to pain in two subscales: avoidance of pain (8 items) and cognitive defusion (4 items) in a 7- point Likert-type scale. $\alpha = .88$.

- ✓ **The Greek Brief Pain Inventory (G-BPI;** Cleeland 1991; Mistakidou, Mendoza, Tsilika, Befon, Parpa et al., 2001). A measure of intensity and interference of pain in a patient's life and the ability to function. Items are related on Likert-type with 0 =“no pain” and 10= “pain as bad as you can imagine”, $\alpha = .86$
- ✓ **The Hospital Anxiety and Depression Scale (HADS;** Zigmond, & Snaith, 1983; Mitsopoulos et al., 2008) detects significant anxiety and depression levels among patients in medical settings without counting physical symptoms that could contaminate the psychiatric symptomatology. 14 items (7 items each) in a Likert-type 4 point scale (0-3), $\alpha = .83$.

- ✓ Item- analysis and missing values
 - Little's MCAR test: Chi-Square = 240.324, df = 216, Sig. = ,123--→ data missing completely at random,
 - Missing values were replaced with the mean in all variables examined for the SEM analyses
 - 2 cases as multivariate outliers, $p < .001$ were excluded (N=158)
- ✓ Structural Equation Modelling using IBM SPSS AMOS 20 (Arbuckle, 2011).
 - Systematic/ random measurement errors and both direct and indirect effects were examined
 - The overall fit of each model the relative fit between models were assessed using a range of goodness-of-fit- statistics and assessment of the appropriateness of the model (chi-square (χ^2) for $p < .001$, the goodness-of-fit index (GFI $> .95$), the root mean square error of approximation (RMSEA $< .08$), and the comparative fit index (CFI $> .95$) were used (Byrne, 2001; Kline, 2005).

Demographics

Variables	Mean (range)	SD
<i>Age (year)</i>		
M	57.5 (range 23-84)	13.07
Mean pain (in years)	11 years (range 8 months and 49 years)	10.1
<i>Sex (%)</i>		
Male	18.8%	.402
Female	81.3%	
<i>Educational levels</i>		
only few years of education,	6.3%	
primary education,	19.4%	
gymnasium	9.4%	
high or vocational school,	29.4%	
college/ university	29.4%	
postgraduate studies	5.6%	
<i>Marital status</i>		
single	8.1%	
separated	5.0%	
married,	72.5%	
widowed	8.8%	
cohabited	1.3%	

Examining the Measurement models of the “Open response style”

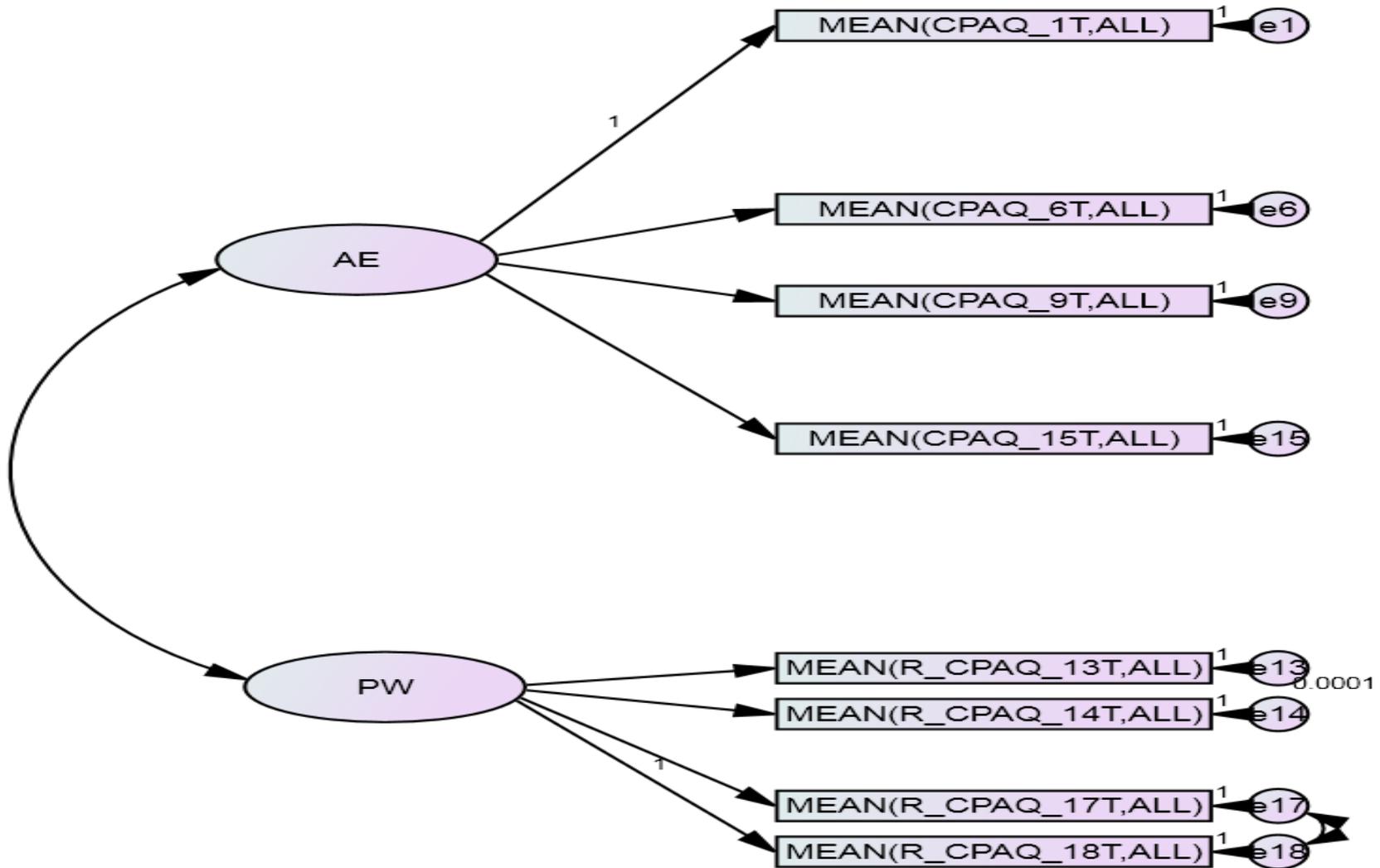
Acceptance

Model	No of items	X2	df	RMSEA	SRMR	CFI	GFI
Model A- 2 Factors CPAQ-8	8	39.219**	19	.082	.078	.952	.944
Model B- 2 Factors CPAQ-8	8	27.358*	19	.053	.071	.980	.961

Model B specifies covariance between error terms for items 13 and 16, indicated by modification indices.

** < .01

* < .05

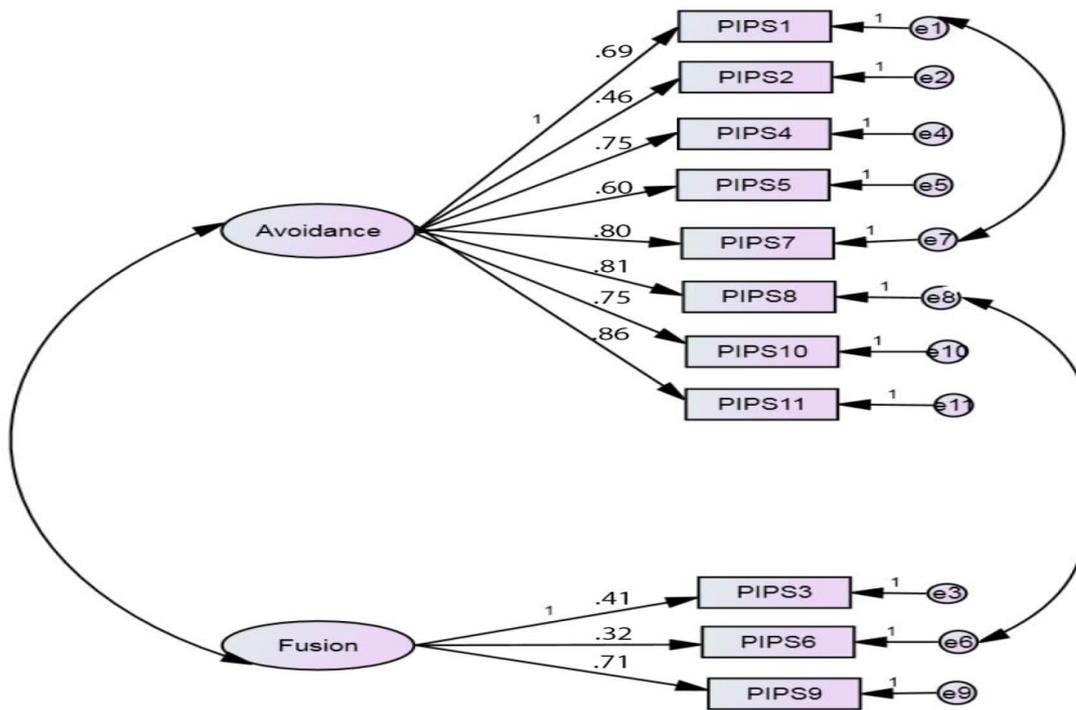


Final model: $\chi^2 (19) = 27.358$, $< .05$, CFI= .980,
 RMSEA= .053, GFI= .961.

Examining the Measurement models of the “Open response style”

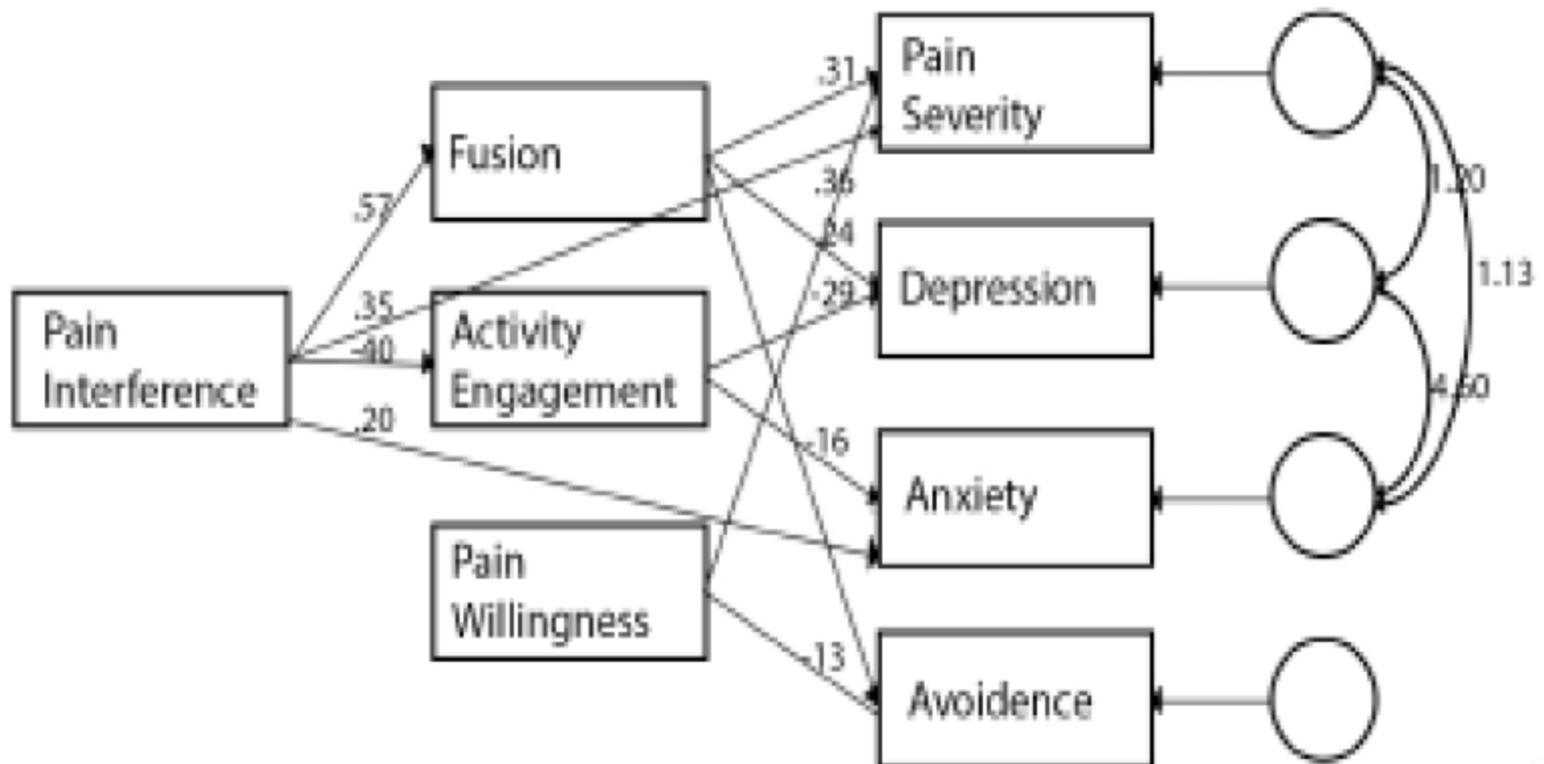
Cognitive Defusion

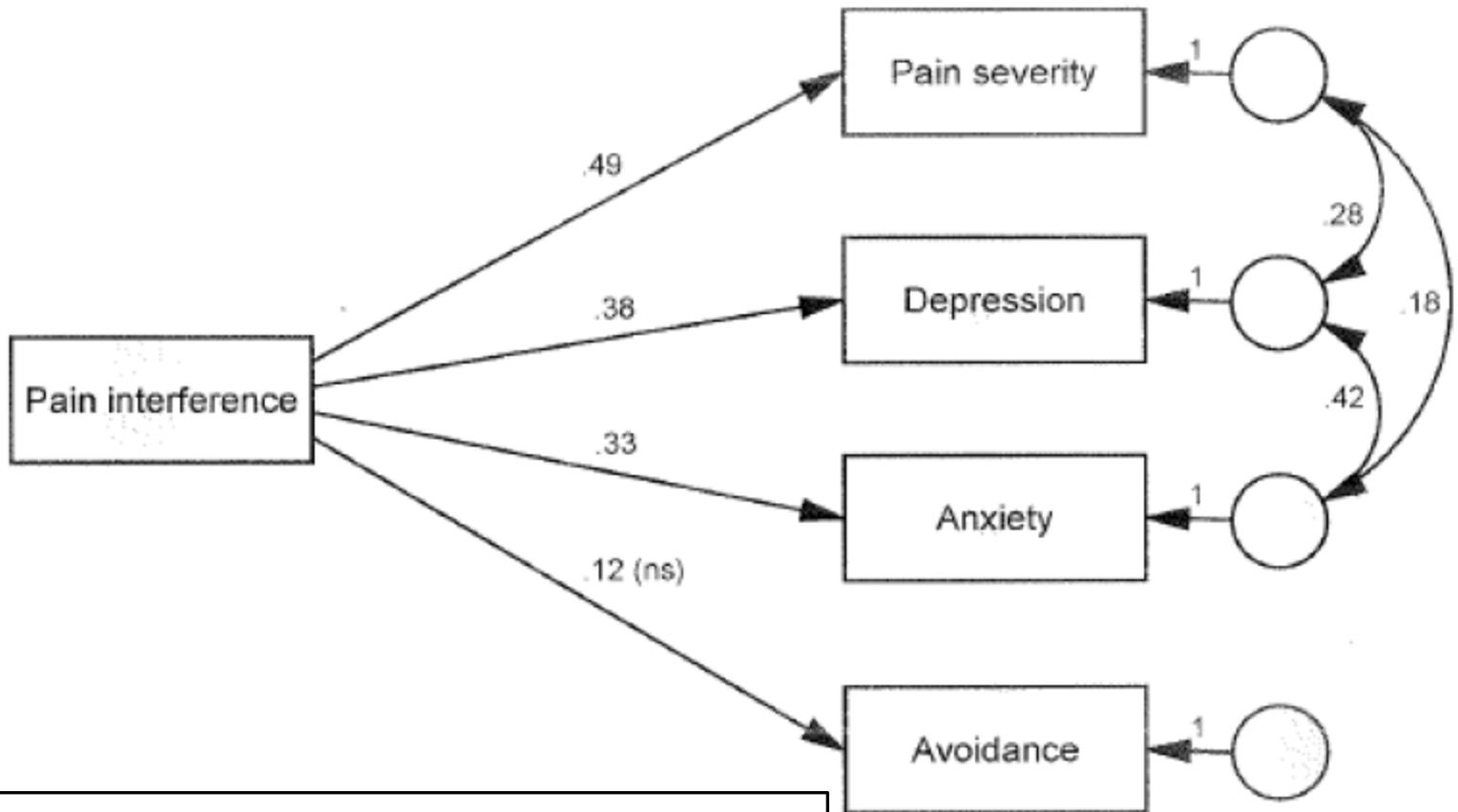
Models		X2 (df), p	RMSEA	CFI	GFI	Difference test Δx , df (p)
Model A-One factor	11 items	108.930 (44), p<.001	.100	.909	.881	
Model B-Two factors	11 items	103.791 (43), p<.001	.098	.915	.886	5.139, 1 (p<.005)
Model C- Two factors and covariate error from err1 to err7	11 items	91.216 (42), p<.001	.089	.931	.896	12575, 1, (p<.001)
Model D- Two factors and covariate error from err8 to err6	11 items	79.537 (41)	.080	.950	.912	11679, 1, p<.001)



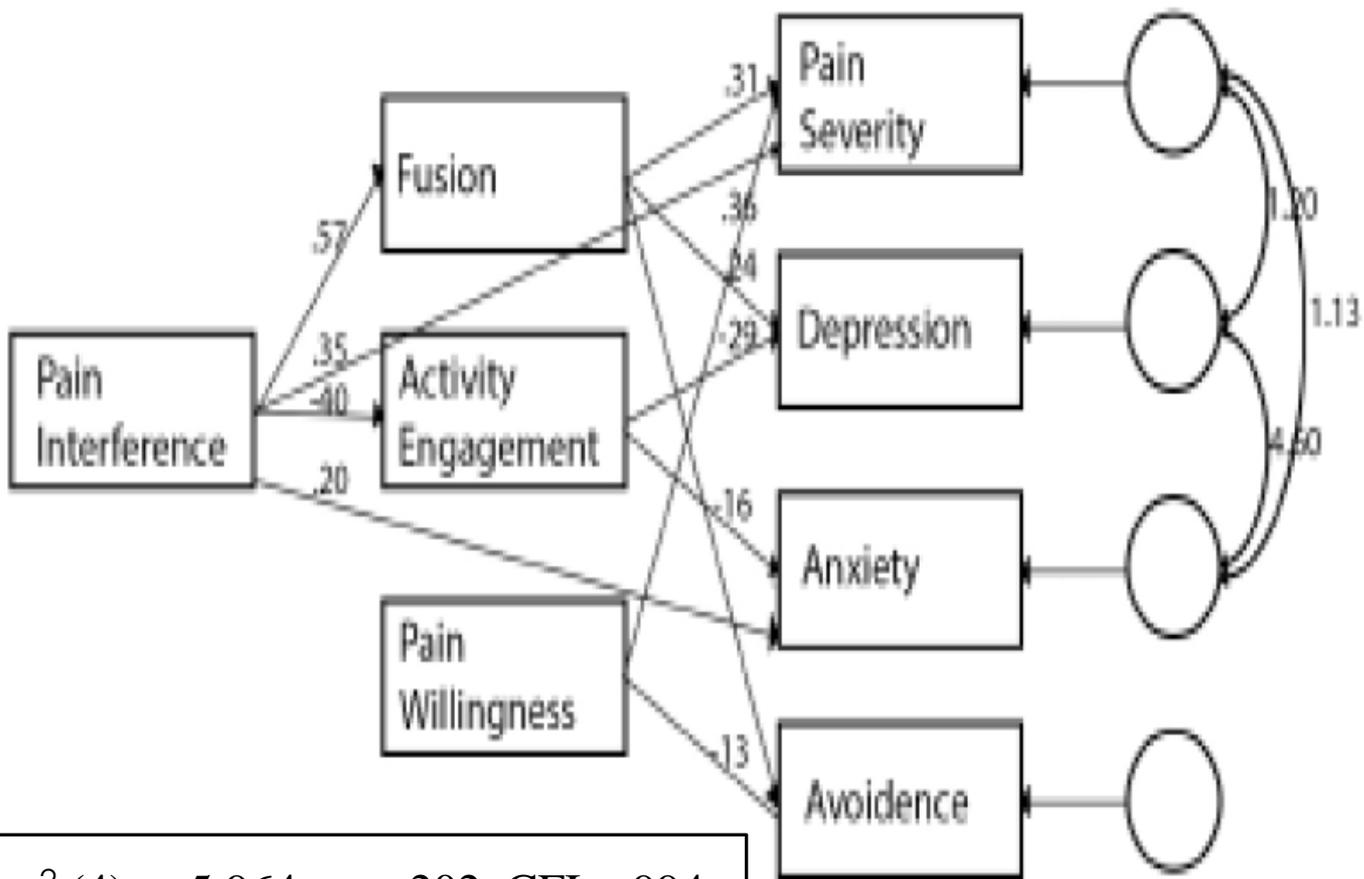
Final model: $\chi^2(41) = 79.537$, $< .05$, CFI= .950, RMSEA= .080, GFI= .912.

Examining the Structural models of the “*Open response style*”



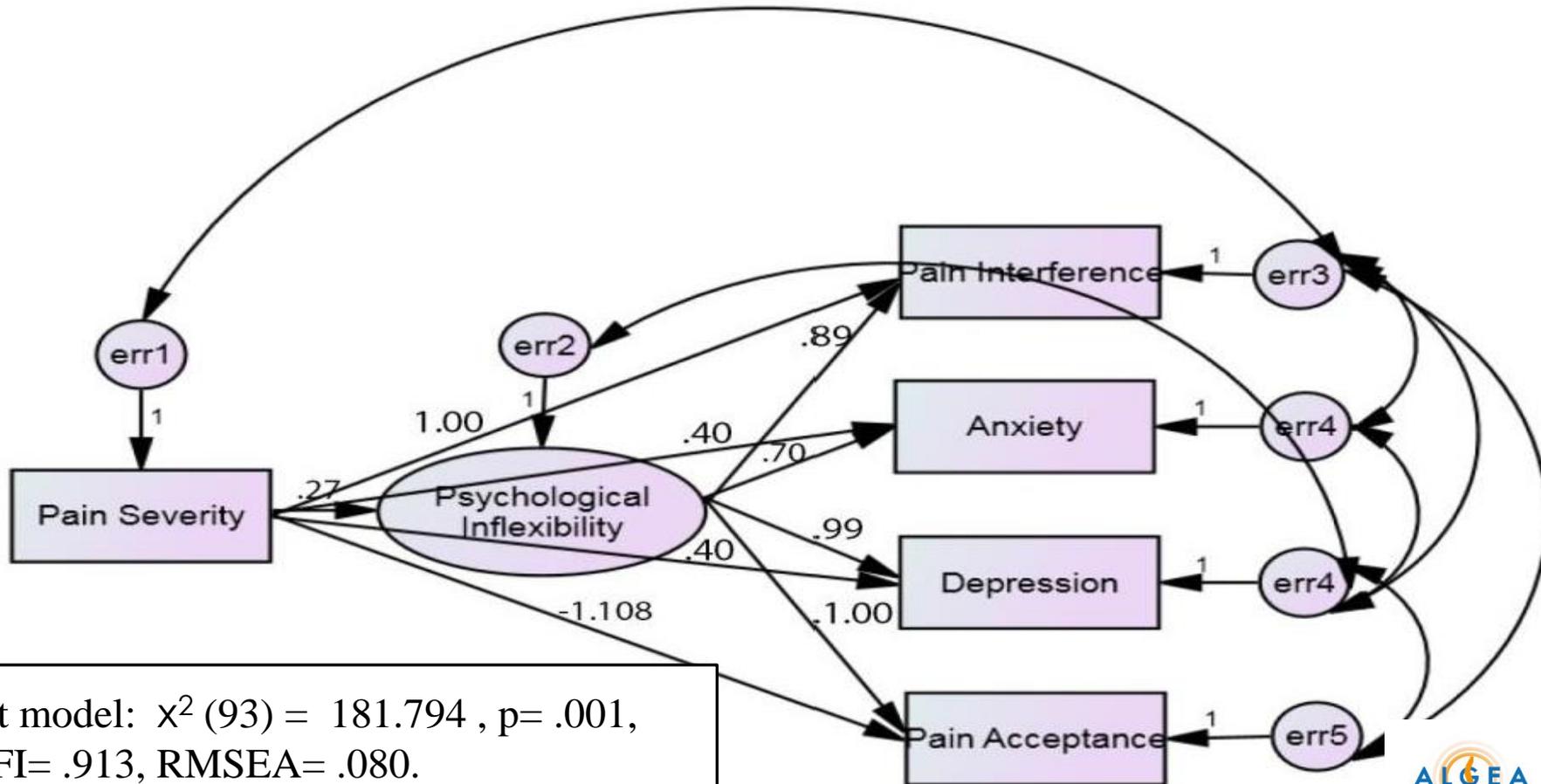


Fit model: $\chi^2(3) = 4.083$, $p = .233$, CFI = .991, RMSEA = .048.



Fit model: $\chi^2(4) = 5.964$, $p = .202$, CFI = .994, RMSEA = .056. SRMR = .030

Examining the Structural models of the “*Open response style*”



Fit model: $\chi^2(93) = 181.794$, $p = .001$,
CFI = .913, RMSEA = .080.

Discussion

- ✓ Reasonable coherence in data and the “*open response style*” of the PF model in predicting aspects of functioning in chronic pain patients
- ✓ Pain-related disability can be explain, to a substantial extend, by the role of psychological inflexibility (what people with chronic pain do to manage pain, e.g. avoiding meaningful activities etc.)
- ✓ The “*open response style*” is clinically useful as it suggests that targeting to increase acceptance and reduce fusion with pain-related thoughts lead to better adjustment to chronic pain

Limitations:

- ✓use of self-report questionnaires and cross-sectional nature of study reduce the validity
- ✓the predictive validity of the “*open response style*” was not evaluated across time with longitudinal designs and randomized control trials

Future directions:

- ✓examination of the “*open response style*” across various samples (e.g. patients with fibromyalgia, chronic neuropathic patients, individuals with headaches) categories and within the other two response styles (“*centered*” and “*actively engaged*”)
- ✓use of multilevel analytic procedures, i.e. multigroup invariance, to broader evaluate the dyadic clusters of response styles

Thank you

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"Καινοτόμο έργο ψυχοκοινωνικής παρέμβασης για την αντιμετώπιση των χρόνιων πόνων σε ασθενείς και τις οικογένειες τους"

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Myrtos Beach, Aerial View, Cephalonia Island.

A&P
SAATCHI & SAATCHI