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Get insight into your pain – Development and evaluation of a multidimensional tool to assess pain concepts

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Background

Misconcepts about pain are widespread among adult patients[1] and even mental health clinicians[2]. They may even be transferred on to patients' children[3]. This preliminary study evaluates the psychometric properties of a new tool, the *biopsychosocial pain concept matrix* (BiPS matrix)[4], in a sample of healthy adults (study I) and aspiring child psychotherapists (study II) and investigates its relationship with pain-related criteria and previous knowledge.

Aims:

1. To evaluate psychometric properties of the BiPS matrix in healthy adults and aspiring psychotherapists
2. To investigate the relationship between the BiPS matrix and previous knowledge of chronic pain, working experience and current pain status

Sample: Study I and Study II

Table 1: Healthy adult sample study I (*N* = 236)

Study I	*N*	Age *M (SD)*
Female	177 (75%)	22,7 (2.36)
Male	57 (25%)	

Table 2: Aspiring psychotherapists sample study II (*N* = 28)

Study II	Working experience (*N*)	Previous knowledge *(N)*
Yes	15 (54%)	19 (68%)
No	13 (46%)	9 (32%)

The BiPS matrix

Table 3: Structure of the BiPS matrix with examples of items

Dimension	**Biological**	**Psychological**	**Social**
Cause	"Chronic pain has a warning function."	"Thoughts can influence pain intensity."	"Pain intensity changes if one has a conflict with family or friends."
Consequences			
Type of pain			
Timeline			
Treatment			

The BiPS matrix is comprised of 40 items, each rated on a 5-point Likert scale: 0 = "strongly disagree" to 4 = "strongly agree".

Results

Study I & II: The total score of the BiPS matrix showed acceptable internal consistency (student sample: α = .81; aspiring psychotherapists: α = .86), while the subscales showed moderate to low internal consistency (see Tables 4 and 5).

Table 4: Cronbach's Alpha for the vertical dimensions of the BiPS matrix

	Cronbach's Alpha	
Dimension	Study I	Study II
Biological	.338*	.414*
Psychological	.719	.780
Social	.720	.810

* α < .60

Table 5: Cronbach's Alpha for the horizontal dimensions of the BiPS matrix

	Cronbach's Alpha	
Dimension	Study I	Study II
Cause	.620	.578*
Consequences	.470*	.695
Type of pain	.440*	.636
Timeline	.118*	.436*
Treatment	.703	.782

Study I: Higher scores of the BiPS matrix total score were associated with higher previous knowledge (r = .21, p < .001).
Study I & II: No correlation with current pain status (p > .05).

Study II: No differences in the biopsychosocial pain concept between aspiring psychotherapists with high vs. low working experience (p > .5).

Significant difference in biological pain concepts between psychotherapists with high vs. low previous knowledge (z = -2.19, p = .028; see Figure 1).

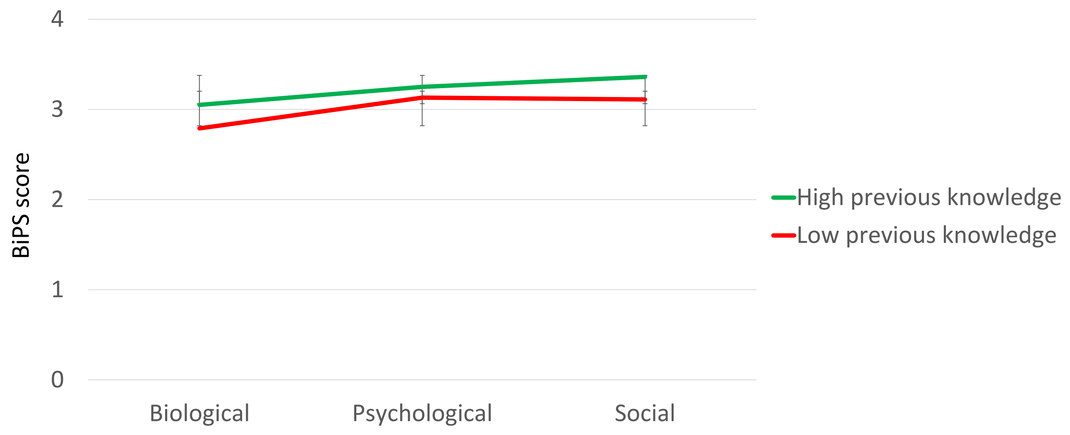

Figure 1: Graphical illustration of the biopsychosocial painconcept in participants with high and low previous knowledge

Discussion

Based on the results, further adaptation and evaluation of the BiPS matrix is needed, especially regarding psychometric properties of some items and the underlying factorial structure. The studies could show that previous knowledge but not working experience with chronic pain patients was associated with pain concepts in healthy adults as well as in aspiring psychotherapists.
Upon further adaptation of the BiPS matrix, it offers the potential to identify knowledge gaps in parents with chronic pain and how misconcepts may be transferred on to their children.

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