



## Patients with Crohn's disease have improved coping strategies after a 3-month course of cognitive behavioral and mindfulness-based stress reduction

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### Introduction

Crohn's disease (CD) patients repeatedly engage with a constellation of symptoms, complications and treatments.

By consolidating these experiences, they learn conscious, intellectual and behavioral processes termed coping strategies whereby they adjust to handle the disease burden and continue to function in the social domain.

Coping with stress can be generally divided into adaptive vs. maladaptive strategies. The Brief COPE tool groups 14 coping skills in 3 strategies: problem-focused, emotion-focused, & dysfunctional.<sup>1</sup> Dysfunctional coping is a negative action. Most patients have moderate to poor coping. Mindfulness is another coping skill addressing psychological distress. We reported that cognitive behavioral and mindfulness-based stress reduction (COBMINDEX) reduces psychological distress and improves the quality of life of CD patients.<sup>2</sup> However, the effect of COBMINDEX on patients' coping strategies was unknown.

### Aims & Methods

We studied the effect of COBMINDEX on coping in a clinical trial. CD patients with mild/moderate disease activity (HBI 5-16) were randomized to COBMINDEX or waitlist controls; all subjects were assessed clinically and filled in psychological questionnaires at study entry (time T1) and after 3 months (T2). COBMINDEX was taught on a digital platform between T1 and T2; daily self-practice was required. Waitlist patients remained on medical follow-up only.

### Results

Table 1: Baseline characteristics

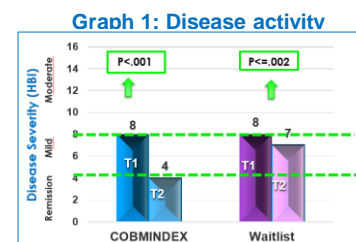
	COBMINDEX	Waitlist
	No. (%) or Median (IQR)	No. (%) or Median (IQR)
Age, median [IQR], years	31 (25.3-41.8)	29.5(26-37.3)
Sex, female, n [%]	40 (66.7)	39 (59.1)
Education level, n [%]		
High school or vocational studies	22 (36)	24 (36.3)
College or university	38 (63.3)	42 (63.6)
Current employment, n [%]	45 (75)	51 (77.3)
Current smoker, n [%]	7 (11.7)	10 (15.2)
Length of illness, median [IQR], yrs	5.3 (2.7-14.5)	5.8 (3.0-11.5)
Harvey-Bradshaw Index		
Mild disease [5-7]	28 (46.7)	31 (47.0)
Moderate disease [8-16]	32 (53.3)	35 (53.0)
Current medication, n [%]		
Steroids	1 (1.7)	7 (5.6)
Immunomodulators	12 (20)	22 (17.5)
Biologics	27 (45)	52 (41.3)

Table 2: Clinical & Psychological characteristics at baseline

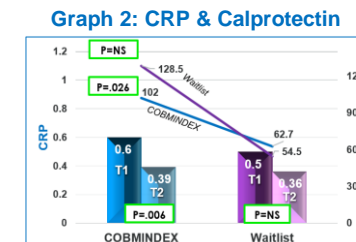
	COBMINDEX	Wait List	P Between groups
	Median [IQR]	Median [IQR]	
Disease Severity (HBI)	8 [7-9.8]	8 [6.8-10.3]	NS
CRP	0.6 [0.29-1.24]	0.5 [0.17-0.9]	NS
Calprotectin	102 [54.75-449.25]	128.5 [19.45-353]	NS
Perceived Stress (PSS-4)	7 [5-8]	8 [6-10]	0.027
Mindfulness	33 [29.3-40]	32.5 [29-36.3]	NS
Emotion-focused coping	25.5 [23-28.8]	25 [23-29]	NS
Emotional support	4.5 [4-6]	5 [4-6]	NS
Positive reframing	5.5 [4-6.75]	5.5 [4-7]	NS
Humor	5 [3-6]	5 [4-7]	NS
Acceptance	7 [6-8]	7 [6-8]	NS
Religion	3 [2-4.8]	3 [2-5]	NS
Problem-focused coping	18 [15-20]	17.5 [15-20]	NS
Active coping	6 [5-8]	6 [5-8]	NS
Planning	6 [5-7]	6 [5-7]	NS
Instrumental support	5 [4-6]	5 [4-6]	NS
Dysfunctional coping	24 [21-28]	25 [22-28.3]	NS
Self-distraction	6 [4-7.8]	6 [5-7]	NS
Denial	2 [2-3.8]	3 [2-4]	NS
Substance use	2 [2-4]	2 [2-4]	NS
Behavioral disengagement	2 [2-4]	2 [2-4]	NS
Venting	4 [3-5.8]	5 [4-5]	NS
Self-blame	5 [5-7]	5 [4-6.3]	NS

At baseline, no significant differences between the study groups except for Perceived Stress

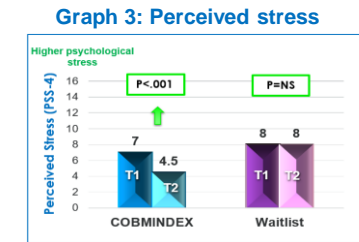
Before (T1) vs. after (T2) COBMINDEX (Median scores)



Disease activity of COBMINDEX significantly decreased by 50% while decrease of only 1 point for waitlist



CRP & Calprotectin of COBMINDEX significantly decreased while no decrease for waitlist



Perceived stress of COBMINDEX significantly decreased while no decrease for waitlist

Graph 4a: Adaptive COBMINDEX profile



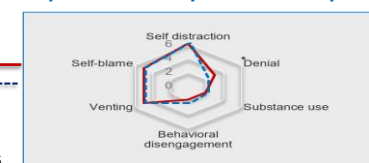
Graph 4b: Adaptive Waitlist profile



Graph 4c: Maladaptive COBMINDEX profile



Graph 4d: Maladaptive Waitlist profile



Graph 5: Mindfulness



Adaptive coping strategies increase for COBMINDEX patients, while no change for waitlist

### Conclusions

➤ Compared to waitlist, COBMINDEX exhibited reduced HBI, CRP & Calprotectin and psychological distress, and **increased Mindfulness and adaptive coping strategies.**

➤ These findings emphasize the importance of adding stress reduction techniques to the medical treatment of Crohn's disease patients.

<sup>1</sup>Carver et al. Int J Behav Med. 1997;4:92

<sup>2</sup>Goren et al. Inflamm Bowel Dis. 2021 in press