



# Metacognitive Short-Term Intervention in Patients With Mental Disorders Following Cardiovascular Events

Philippa Gebhardt<sup>1†</sup>, Flora Caldarone<sup>1†</sup>, Mechthild Westhoff-Bleck<sup>2</sup>, Karen M. Olsson<sup>3,4</sup>, Marius M. Hoepfer<sup>3,4</sup>, Da-Hee Park<sup>3,4</sup>, Britta Stapel<sup>1</sup>, Michael H. Breitrner<sup>5</sup>, Oliver Werth<sup>5</sup>, Ivo Heitland<sup>1‡</sup> and Kai G. Kahl<sup>1\*‡</sup>

## OPEN ACCESS

### Edited by:

Virginio Salvi,  
Marche Polytechnic University, Italy

### Reviewed by:

Esben Stig Strodl,  
Queensland University of Technology,  
Australia  
Roger Hagen,  
Norwegian University of Science  
and Technology, Norway  
Samuel Myers,  
Bar-Ilan University, Israel

### \*Correspondence:

Kai G. Kahl  
kahl.kai@mh-hannover.de

<sup>†</sup>These authors share first authorship

<sup>‡</sup>These authors share last authorship

### Specialty section:

This article was submitted to  
Psychological Therapy  
and Psychosomatics,  
a section of the journal  
Frontiers in Psychiatry

**Received:** 10 November 2021

**Accepted:** 09 March 2022

**Published:** 04 April 2022

### Citation:

Gebhardt P, Caldarone F,  
Westhoff-Bleck M, Olsson KM,  
Hoepfer MM, Park DH, Stapel B,  
Breitrner MH, Werth O, Heitland I and  
Kahl KG (2022) Metacognitive  
Short-Term Intervention in Patients  
With Mental Disorders Following  
Cardiovascular Events.  
*Front. Psychiatry* 13:812807.  
doi: 10.3389/fpsy.2022.812807

<sup>1</sup> Department of Psychiatry, Social Psychiatry and Psychotherapy, Hannover Medical School, Hannover, Germany,

<sup>2</sup> Department of Cardiology and Angiology, Hannover Medical School, Hannover, Germany, <sup>3</sup> Department of Respiratory Medicine, Hannover Medical School, Member of the German Center for Lung Research (DZL/BREATH), Hannover, Germany, <sup>4</sup> Biomedical Research in Endstage and Obstructive Lung Disease Hannover (BREATH), Hannover, Germany,

<sup>5</sup> Information Systems Institute, Leibniz University Hannover, Hannover, Germany

**Background:** Mental disorders are common among patients with severe cardiovascular diseases (CVD). Yet, there is a lack of easily accessible evidence-based treatments. Recent research indicates elevated prevalence of dysfunctional metacognitions in patients with mental disorders following cardiovascular events. As metacognitive therapy (MCT) is an established treatment to modify metacognitions, we tested if a brief metacognitive intervention *via* videotelephony is effective in this patient group.

**Methods:** A brief MCT treatment was tailored to CVD patients and designed as a face-to-face internet-based intervention. Five patients with CVDs and comorbid mental disorders underwent a psychocardiological examination and diagnostic approach. Each patient participated in eight 50 min sessions *via* encrypted video messenger service. Metacognitions, depression and anxiety symptoms and quality of life were assessed by self-report measures pre- and post-treatment. Patients rated dysfunctional thought processes, current psychological impairment, and treatment satisfaction after each session. Intended follow-up measures were not reported due to missing data.

**Results:** For most patients, the brief metacognitive intervention was associated with a decrease in dysfunctional metacognitions and a reduction of symptoms of anxiety and depression post-treatment. Psychological and physiological quality of life improved. Patients reported high satisfaction with the tailored treatment.

**Conclusion:** Our results suggest that a brief internet-based metacognitive treatment may be a promising tool for patients with CVDs and comorbid mental disorders. Feasibility and acceptance of the intervention was rated high by the patients. Further research is necessary to support the preliminary findings and to adapt and evaluate the intervention in a controlled clinical trial setting.

**Keywords:** cardiovascular disease, mental disorder, metacognitive therapy, psychotherapy, psychocardiology