

Enhancing stress reactivity and wellbeing in early schizophrenia: A pilot study of individual coping awareness therapy (I-CAT)

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Early intervention
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Individual therapy mindfulness
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Dear Editors:

Positive psychology strategies and mindfulness are two non-traditional approaches to psychotherapy increasingly employed to aid recovery from psychosis (Shonin et al. 2014; Slade 2010). Positive psychology interventions focus on increasing experiences of positive emotions to improve wellbeing (Rashid 2015), while mindfulness interventions reduce stress reactivity, and facilitate experiences of positive emotions (Geschwind et al. 2011; Gu et al., 2015).

In Individual Coping Awareness Therapy (I-CAT) individuals learn adaptive and resilient responses to stress. Given stressful life events typically precede the onset of a first episode and relapse in schizophrenia, a dysregulated stress response could be a significant barrier to achieving full recovery. We evaluated the feasibility of I-CAT in a single group open trial.

The sample included six participants with early schizophrenia who had less than five years of treatment with antipsychotic medication. Participants had a mean age of 23.9 (SD = 2.95) with 67% male. Mean education was 13.8 years (SD = 1.81). Positive and Negative Syndrome Scale (PANSS) mean total score at baseline was 72.83 (SD = 13.85). The study was approved by the Institutional Review Board.

I-CAT includes two core elements: 1) in vivo practice of mindfulness and positive psychology strategies and 2) development of an individualized plan that is incorporated into a person's daily routine. I-CAT involves up to 26 one-hour, individual sessions. The I-CAT therapists included two advanced psychology graduate students, one psychiatrist, one master's level therapist, and one psychologist. Therapists audio recorded therapy sessions to allow for an examination of fidelity.

PANSS, the Ryff Scales of Psychological Wellbeing, the Connor-Davidson Resilience Scale and the abbreviated Quality of Life Scale were assessed at baseline, post-treatment, and three-month follow-up time points. Participants accessed a private daily diary platform online throughout the course of the study. To assess participant satisfaction, a 10-item questionnaire (used in previous studies) was used to obtain feedback about I-CAT. Descriptive statistics and percentages were used to determine the feasibility and acceptability of I-CAT. Within-group effect sizes are reported for changes between (1) baseline and post-test, and (2) baseline and 3-month follow-up.

Participants attended a mean of 21.3 I-CAT sessions (SD = 6.8) and attended a range of 8 to 26 sessions. All participants completed at least

half of the I-CAT sessions. Overall, the results were positive indicating that most participants found the exercises somewhat to very useful (100%, $n = 6$), respectful (100%, $n = 6$), and enjoyable (83%, $n = 5$).

Participants completed the daily diary 58.8% of the time (SD = 29.4; range = 23.6%–95.4%) and reported using at least one mindfulness strategy on 49.0% of all daily diary days (range = 27.0% to 79.9%) and one positive psychology strategy on 28.9% of all daily diary days (range = 11.1% to 52.1%). Sitting meditation (37.9% of entries) was the most commonly used mindfulness strategy reported. Savoring (14.3% of entries) was the most commonly reported positive psychology strategy. Participants reported practicing a mindfulness strategy a mean of 9.3 min daily (SD = 5.4) and practicing a positive psychology strategy 12.5 min daily (SD = 7.8). Sitting meditation was rated as the most effective mindfulness strategy with a mean of 4.7 out of 7 (SD = 1.4). Positively grateful was rated the most effective positive psychology strategy with a mean of 5.1 out of 7 (SD = 1.2).

Changes in all outcome measures were in the expected direction as shown in Table 1. Reports of stress showed the largest improvement from baseline to post-test ($d = -2.17$), followed by an increase in psychological wellbeing ($d = 0.62$). The strongest effect at post-treatment was in improvements in quality of life ($d = 0.26$), resiliency ($d = 0.88$), and general psychiatric symptoms ($d = -0.66$). Changes in the remaining outcome measures were associated with small to medium effect sizes. Improvements in outcomes were maintained but attenuated at follow-up.

Results from this pilot study provide the first level of support that I-CAT is both feasible and tolerable for persons with early schizophrenia and that I-CAT could be an alternative approach to help people develop a more adaptive and resilient response to stress. Newer treatment approaches for schizophrenia suggest that individuals may benefit from interventions targeting wellbeing and negative emotion regulation (Johnson et al. 2011; Meyer et al. 2012; Schrank et al. 2016). The I-CAT intervention is unique as it integrates a set of mindfulness activities with a set of positive psychology activities packaged into one intervention (Sin and Lyubomirsky 2009).

This study has several limitations. First, this was an extremely small, uncontrolled study with no control group that involved a relatively short follow-up period and should be interpreted with caution. However, based on prior mindfulness and positive psychology interventions and results from this feasibility study, I-CAT is a promising intervention and further area of study.

Conflict of interest

All authors have no conflicts of interest to disclose.

Contributors

Piper Meyer-Kalos wrote the first draft of the manuscript, was a principal investigator, helped with the study design, helped design the intervention, and supervised the therapists. Kelsey Ludwig assisted in drafting the manuscript and contributed to the final manuscript. Susan Gaylord helped design the intervention, supervised the therapists, and

Table 1
Clinical outcome scores at baseline, post-treatment, and follow-up ($n = 6$).

Task	Baseline		Post-treatment			Follow-up		
	Mean	SD	Mean	SD	d (se) ^a	Mean	SD	d (se) ^b
PWB	64.33	19.50	76.33	15.19	0.62 (0.38)	74.00	13.90	0.50 (0.28)
PSS	28.83	4.45	19.17	8.45	-2.17 (1.49)	16.67	5.28	-2.73(0.37)
CD-RISC	21.67	6.28	27.17	8.38	0.88 (0.47)	25.33	8.57	0.58 (0.37)
PANSS (tot)	72.83	13.85	63.67	11.94	-0.66 (0.39)	65.00	11.73	-0.57 (0.29)
QLS (tot)	22.67	6.77	30.5	9.00	0.26 (0.62)	29.67	4.41	0.33 (0.28)

Note: All Cohen's d values represent magnitude of the change based on standard deviations from baseline.

Note: Scales of Psychological Wellbeing (PWB), Perceived Stress Scale (PSS), Connor-Davidson Resilience Scale (CD-RISC), Positive and Negative Syndrome Scale (PANSS), Quality of Life Scale (QLS).

^a Effect size comparison is between baseline and post-treatment assessments.

^b Effect size comparison is between baseline and follow-up assessments.

approved the final manuscript. Diana Perkins was a principal investigator, assisted with study design, and contributed to the final manuscript. Karen Grewen assisted with the study design and approved the final manuscript. Olafur Palsson assisted in the design of the daily diary, assisted in statistical analyses, and contributed to the final manuscript. Margaret Burchinal served as the study statistician and contributed to the final manuscript. David Penn served as a principal investigator, oversaw study implementation, contributed to the study design, assisted in designing the intervention, and contributed to the final manuscript. All authors contributed to and approved the final manuscript.

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Piper S. Meyer-Kalos
Minnesota Center for Chemical and Mental Health, The University of
Minnesota, St. Paul, MN, USA

Corresponding author at: Minnesota Center for Chemical and Mental
Health, The University of Minnesota, 1404 Gortner Ave., St. Paul, MN
55108, United States.

E-mail address: psmeyer@umn.edu.

Kelsey A. Ludwig
The Department of Psychology, The University of North Carolina at Chapel
Hill, Chapel Hill, NC, USA

Susan Gaylord
The Department of Physical Medicine and Rehabilitation, The University of
North Carolina at Chapel Hill, Chapel Hill, NC, USA

Diana O. Perkins
Karen Grewen
The Department of Psychiatry, The University of North Carolina at Chapel
Hill, Chapel Hill, NC, USA

Olafur S. Palsson
Center for Functional GI & Motility Disorders, The University of North Car-
olina at Chapel Hill, Chapel Hill, NC, USA

Margaret Burchinal
Frank Porter Graham Child Development Institute, The University of North
Carolina at Chapel Hill, Chapel Hill, NC, USA

David L. Penn
The Department of Psychology, The University of North Carolina at Chapel
Hill, Chapel Hill, NC, USA
Australian Catholic University, School of Psychology, Melbourne, VIC,
Australia

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