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Bouldering psychotherapy reduces depressive symptoms even when general physical activity is controlled for: A randomized controlled trial

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Abstract

Background: Bouldering psychotherapy (BPT) combines psychotherapeutic elements with physical activity (PA). It might be effective for reducing symptoms of depression, but so far, no study has assessed individuals' levels of PA to control for whether positive effects on depression can also be found when adjusting for participants' levels of PA. This is important because PA itself has been proven effective in reducing depression and therefore might be an important variable to account for – especially in therapies using sport as one therapeutic mechanism.

Methods: Using a waitlist control group design, outpatients with depression were assessed at baseline and after eight, 16, and 24 weeks. The intervention group took part in an eight-week bouldering psychotherapy which met once a week for three

hours. Self-report measures before and after the intervention included the Symptom Checklist-90-R (SCL-90-R), the Beck Depression Inventory (BDI-II), and the questionnaire on resources and self-management skills (FERUS). PA was assessed during the first 16-week period via FitBit Zip accelerometers.

Results: Altogether, 47 complete cases (20 men and 27 women) were included in the final analyses. Depression scores dropped by up to 6.74 (CI 2.80–10.67) points on the SCL-90-R depression scale and by up to 8.26 (CI 4.21–12.31) points on the BDI-II during the BPT intervention, the control group remained stable (SCL-90-R Cohen's $d = 0.60$; BDI-II: Cohen's $d = .50$). All Participants accrued an average of 6,515 steps per day, which is considered "low-active." Participants of the BPT intervention were significantly more likely to reduce their depressive symptoms ($p = .025$) than participants of the control group, even when PA was controlled for in a regression analysis.

Limitations: Limitations of the study are the relatively small number of patients and the assessment of outcome scores via self-report.

Conclusions: This study provides evidence that short-term BPT can be effective for reducing symptoms of depression even if controlled for other therapeutically active confounders including antidepressant medication, psychotherapy and general level of PA.

Keywords: Clinical psychology, Evidence-based medicine, Psychiatry, Psychology

1. Background

With approximately one in eight people suffering from depression at some point in their lives (Bromet et al., 2011), depression is a very common psychiatric disorder and one of the leading causes of disability (GBD 2015 DALYs and HALE Collaborators, 2016a). It is rated one of the three leading causes of years lived with disease (YLD) for adults up to 50 years worldwide (GBD 2015 DALYs and HALE Collaborators, 2016b) and is expected to become the second leading contributor to the global burden of disease by 2020 (WHO, 2001). Given this urgency to provide depressed patients with effective and long-lasting treatment strategies, alternative therapies (e.g., exercise) that can complement traditional treatments are on the rise. Evidence-based exercise programs associated with reduced depressive scores include walking or running (Blumenthal et al., 2007; Dunn et al., 2005; Knubben et al., 2007), cycling (Dunn et al., 2005; Pinchasov et al., 2000), muscle strengthening (Mather et al., 2002; Pilu et al., 2007), stretching (Mather et al., 2002), as well as the combination of aerobic and anaerobic exercise (Brenes et al., 2007). Existing reviews and meta-analyses have verified this positive relationship between physical activity (PA) and the alleviation of depression with effect sizes ranging from 0.40 to 1.42 (Josefsson et al., 2014; Krogh et al., 2011; Rebar et al., 2015;

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