Original Paper

A Mobile-Based Intervention to Increase Self-esteem in Students With Depressive Symptoms: Randomized Controlled Trial

Alina Bruhns, MSc; Thies Lüdtke, PhD; Steffen Moritz, Prof Dr; Lara Bücker, PhD

University Medical Center Hamburg-Eppendorf (UKE), Hamburg, Germany

Corresponding Author:
Lara Bücker, PhD
University Medical Center Hamburg-Eppendorf (UKE)
Martinistraße 52
Hamburg, 20251
Germany
Phone: 49 40741055868
Email: l.buecker@uke.de

Related Article:

This is a corrected version. See correction statement in: https://mhealth.jmir.org/2022/5/e39448

Abstract

Background: Depressive symptoms are one of the most common and ever-increasing mental health problems among students worldwide. Conventional treatment options, particularly psychotherapy, do not reach all students in need of help. Internet- and mobile-based interventions are promising alternatives for narrowing the treatment gap.

Objective: In the framework of a randomized controlled trial, we aim to investigate the effectiveness, acceptance, and side effects of a self-help smartphone app (*MCT & More*) based on cognitive behavioral therapy, mindfulness, acceptance and commitment therapy, and metacognitive training in a sample of students with self-reported depressive symptoms. Furthermore, we were interested in examining the influence of treatment expectations and attitudes toward internet- and mobile-based interventions on treatment adherence and effectiveness.

Methods: A total of 400 students were recruited via open access websites and randomized to either the intervention group (n=200), who received access to the self-help smartphone app *MCT & More* for a period of 4 weeks, or to a wait-list control group (n=200). The Patient Health Questionnaire-9 (depression) served as the primary outcome parameter, and the Rosenberg Self-esteem Scale (self-esteem) and the global item of the World Health Organization Quality of Life-abbreviated version (quality of life) served as the secondary outcome parameters. The Attitudes Towards Psychological Online Interventions was used to measure attitudes toward internet- and mobile-based interventions. Outcome expectations were assessed using the Patient Questionnaire on Therapy Expectation and Evaluation, and side effects were assessed using the Inventory for Assessing Negative Effects of Psychotherapy.

Results: Per-protocol (PP), complete-case, and intention-to-treat analyses showed a significantly higher reduction in depressive symptoms (PP: $F_{1,222}$=3.98; P=.047; d=0.26) and a significantly higher increase in self-esteem (PP: $F_{1,220}$=8.79; P=.003; d=0.40) in the intervention group than in the wait-list control group. Most participants regularly used the self-help smartphone app (91/120, 75.8%, at least once a week). The more positive the attitude toward internet- and mobile-based interventions (r=0.260; P=.004) and the more positive the outcome expectation (r=0.236; P=.009), the more frequently the self-help smartphone app was used.

Conclusions: The effectiveness of the self-help smartphone app *MCT & More* was demonstrated among students with depressive symptoms compared with a wait-list control group. The app could be offered regularly as a low-threshold intervention to enhance students' health.

Trial Registration: German Clinical Trials Register DRKS00020941; https://tinyurl.com/pr84w6er

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