

# Delivering Happiness Online: A Randomized Controlled Trial of a Web Platform For Increasing Happiness

## ABSTRACT

Although both online and in-person positive psychology interventions (PPIs) exist, no randomized controlled trials (RCT)—the gold standard in intervention research—have compared the effectiveness of these formats. We created a 12-week skill-based PPI (ENHANCE), organized into three target areas: the core self (e.g., values, strengths), the experiential self (e.g., mindfulness, self-compassion), and the social self (e.g., gratitude, social life). In a 6-month randomized controlled trial (RCT) with a community sample of 154 healthy adults, we administered the ENHANCE program separately online ( $n = 100$ ) and in-person ( $n = 54$ ). The in-person version of the program involved 2-hour weekly group sessions run by clinical practitioners. The online version followed a parallel structure with identical content; each participant created an account on a custom-designed integrated web platform, where they were able to view the session content, complete exercises, and save their responses to those exercises. We found that the program caused the predicted increases in positive affect and life satisfaction, with downstream consequences for mental and physical health. The online mode of administration was as effective as the in-person mode of administration for producing these outcomes. This finding provides critical evidence for the potential of online PPIs to bring about the same changes in well-being as in-person interventions—but at a much larger scale. This research thus lays the foundations for administering empirically validated interventions to populations who may not be able to afford access to in-person interventions—from busy professionals to underprivileged populations.

### Author Keywords

Online interventions; randomized controlled trial; happiness; subjective well-being; health.

### ACM Classification Keywords

Human-centered computing; Web-based interaction; Field studies; Empirical studies in HCI.

### METHODOLOGY

Integrating the best evidence in the positive psychology literature of the factors that increase happiness, we designed a 12-week online skill-based positive psychology intervention, ENHANCE: Enduring Happiness and Continued Self-Enhancement. The modules of ENHANCE are based on empirical evidence of the most effective happiness-boosting activities. But ENHANCE is designed to be more than a sum of its parts; its comprehensive variety of activities combats two key challenges to sustained happiness: poor person-activity fit and hedonic adaptation to the same activities. We conducted a 6-month randomized controlled trial (RCT) to compare the effectiveness of web-based delivery and in-person delivery in producing sustained

increases in subjective well-being. In both formats, participants completed an active learning module, featuring information and exercises (e.g., self-diagnostic surveys, written reflections). At the end of the modules, participants planned an assigned activity to integrate the activities in their daily lives (e.g., savoring a favorite daily experience). At the beginning of the following module (a week later), participants completed further exercises designed to help them form new habits (e.g., meditate, express gratitude). At the end of the program, participants received individualized feedback about their best fitting activities and completed habit-forming exercises. Outcomes were assessed at baseline, three months (right after program completion), and six months (three months follow-up). Our retention rate was over 80%. Using a waiting-group control paradigm, we randomly assigned participants to either an active treatment group, who completed the program in Months 1 through 3 of the trial, or a waiting-group control, who completed the program after the final assessment.

### RESULTS

We found that the online mode of administration was as effective as the in-person mode of administration for subjective well-being (e.g., positive emotions)—benefits that persisted three months after completing the program. The program also produced benefits for physical and mental health. Participants felt *less depressed* and *stressed* and reported *4.5 fewer days of feeling anxious* in the previous month after completing the program than at baseline (with no changes in the control group). Finally, from pre- to post-test, participants in the program also reported experiencing fewer health-related symptoms, including headache, pains, dizziness, coughing, sneezing, and sore throat.

### SIGNIFICANCE

As the number of happiness web and mobile apps continues to climb, empirical evidence for the effectiveness of these apps is scarce. And in an effort to engage users in a competitive market, such for-profit apps often focus on creating a sustained user base (rather than on producing sustained increases in well-being). To our knowledge, ENHANCE is the first comprehensive web-based program that is designed and validated to produce sustained benefits in well-being. ENHANCE can thus be used as a comparison in future research examining the benefits of existing web-based happiness programs. As a scientific tool, the ENHANCE web platform can also be used to examine the optimal selection, combination, and dosage of positive activities in enhancing happiness. We are particularly excited about presenting at this joint conference as a way of forging invaluable connections with researchers and developers interested in empirically validated positive interventions.