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Examining the Effectiveness and Feasibility of a Self-Guided Version of Positive Affect Treatment

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Author
Loerinc, Amanda Gloria

Publication Date
2018

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Examining the Effectiveness and Feasibility of a Self-Guided Version of Positive Affect Treatment

A dissertation submitted in partial satisfaction of the requirements for the degree Doctor of Philosophy in Psychology

by

Amanda Gloria Loerinc

2018
ABSTRACT OF THE DISSERTATION

Examining the Effectiveness and Feasibility of a Self-Guided Version of Positive Affect Treatment

by

Amanda Gloria Loerinc

Doctor of Philosophy in Psychology
University of California, Los Angeles, 2018
Professor Michelle Craske, Chair

Anxiety disorders and depression are among the most prevalent mental disorders with close to one third of the population meeting diagnostic criteria at some point during their lifetimes (Kessler et al., 2005; 2012). Cognitive and behavioral therapies (CBT) are considered to be the most efficacious and empirically supported psychosocial interventions for anxiety and depression (Hofmann & Smits, 2008; Norton & Price, 2007; Tolin, 2010). While research indicates CBT to be superior to several other treatments, placebos, and waitlist controls, there is evidence that not every individual benefits from CBT and response rates hover around 50% at post-treatment (Loerinc et al., 2015). There are also several barriers to evidence-based outpatient treatment for anxiety and depression including cost effectiveness, adherence to the CBT model, and clinical
attitudes about delivering evidence-based treatments (Addis, 2002; Barlow, 2004; Barlow et al., 1999; Chorpita & Nakamura, 2004). To address the barriers, researchers have begun developing self-guided or internet-based delivery of CBT. Research indicates no differences in effectiveness between self-guided CBT and traditional face-to-face CBT (Cuijpers et al., 2010; Hedman et al., 2012). Additionally, reliance upon the DSM for clinical decision-making does not appropriately align with neuroscience or genetics (Insel et al., 2010) and recent research suggests that anxiety disorders and depression share common higher-order constructs (Brown, 2007). The Research Domain Criteria (RDoC) is an initiative designed to address these limitations (Insel et al., 2010). Thus, using the principals of RDoC, this study sought to examine the effectiveness of a self-guided approach to the treatment of deficits in reward sensitivity using a positive affect protocol. Participants who self-referred for treatment and met criteria for Depression (CSR ≥4) on the SCID 5 (First et al., 1994) were recruited for the study. Utilizing a multiple baseline experimental design, participants were randomized to a 2, 4, or 6-week baseline prior to treatment administration to test the effects of the positive affect intervention on symptoms of depression and anxiety. The 15-session intervention included pleasant events scheduling, attending to the positive, and cultivating positive emotions. The daily measures largely did not reflect that symptoms remained stable during the baseline phase and reduced during the intervention period. We did find, however, that symptoms of depression and anxiety decreased overall on pre/post measures of depression and anxiety symptoms. Additionally, diagnosis severity of depression decreased for all participants on the SCID 5.
The dissertation of Amanda Gloria Loerinc is approved.

John Carl Piacentini
Ayako Janet Tomiyama
Bruce L Baker
Michelle Craske, Committee Chair

University of California, Los Angeles
2018
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Amanda Gloria Loerinc
aloerinc@ucla.edu
405 Hilgard Avenue
Los Angeles, CA 90095

EDUCATION

2018 (expected)  University of California, Los Angeles
Doctor of Philosophy, Clinical Psychology

2013  University of California, Los Angeles
Master of Arts, Clinical Psychology

2010  Boston University
Bachelor of Arts, Psychology

HONORS AND AWARDS

2015  Invited to attend the DBT Strategic Planning Meeting with Marsha Linehan, Ph.D.
University of Washington

2015  Beck Institute for Cognitive Behavioral Therapy Student Scholarship
University of Pennsylvania

2015  Clinical Scientist Award
University of California, Los Angeles

2013 & 2014  Graduate Summer Research Mentorship Award
University of California, Los Angeles

2012  University Fellowship
University of California, Los Angeles

2011  DSM 5 Anxiety Disorders Editorial Committee
University of California, Los Angeles

2010  Cum Laude, Honors in Psychology
Boston University

2007-2010  Dean’s List
Boston University

RESEARCH EXPERIENCE

2015 – 2018  Doctoral Student and Principal Investigator, Dissertation
UCLA Department of Psychology

2012 – 2014  Doctoral Student and Principal Investigator, Master’s Thesis
Department of Psychology, University of California, Los Angeles

2012 – 2018  Graduate Student Researcher
UCLA Department of Psychology

CLINICAL EXPERIENCE

2017 – 2018  Psychology Intern
VA Sepulveda Ambulatory Care Center
2014 – 2016  **Chief Extern/Adult CBT Extern**  
*Harbor-UCLA Medical Center*

2012 – 2017  **Graduate Student Therapist**  
*UCLA Department of Psychology*

**PUBLICATIONS**


**PRESENTATIONS**

**SYMPOSIA**


Introduction

Anxiety disorders and depression are among the most prevalent mental disorders with close to one third of the population meeting diagnostic criteria at some point during their lifetimes (Kessler et al., 2005; 2012). Cognitive and behavioral therapies, herein referred to as CBT, are considered to be the most efficacious and empirically supported psychosocial interventions for anxiety and depression (Hofmann & Smits, 2008; Norton & Price, 2007; Tolin, 2010; Olatunji et al., 2010; Hofmann et al., 2014). Cognitive behavioral therapy for anxiety is a short-term skills-based treatment, typically ranging from 8-14 sessions and consists of psychoeducation, cognitive restructuring, and exposure, while CBT for depression includes psychoeducation, cognitive restructuring, and behavioral activation (Arch et al., 2012; Craske, 2005). Several meta-analyses show that CBT for anxiety disorders yields effects considerably higher than no-treatment, wait-list, or placebo controls (Hedges $g = .73$ to $1.53$, depending on whether waitlist conditions are included or excluded; Butler et al., 2006; Hofmann & Smits, 2008; Norton & Price, 2007). These findings also extend to technology-supported CBT relative to waitlist conditions (Hedges $g = 0.88$; Andrews et al., 2010). Furthermore, CBT has been shown to be more effective than alternative psychosocial treatments, such as psychodynamic therapies ($d = 0.22$; Tolin, 2010).

Efficacy of CBT for Depression and Specific Anxiety Disorders

Depression

Several clinical trials of CBT for depression have been conducted in the last four decades (Gloaguen et al., 1998; Butler et al., 2006; Hollon & Ponniah, 2010). A methodologically
A rigorous meta-analysis conducted by Gloaguen et al. (1998) on CBT for depression found CBT to be superior to waitlist or placebo control. In addition, Gloaguen and colleagues (1998) compared CBT to a group of miscellaneous therapies and found CBT to be modestly superior (es = 0.24). A meta-analysis conducted by Hollon & Ponniah (2010) also found CBT (including cognitive therapy and behavioral therapy) to be efficacious and specific in the treatment of MDD (Hollon & Ponniah, 2010; DeRubeis et al., 2005; Dimidjian et al., 2006; Cuijpers et al., 2013).

Additionally, Watts and colleagues (2015) found CBT to be superior to treatment as usual for depression. Response rates of CBT for depression are consistent with those for anxiety disorders (Loerinc et al., 2015) and range from 51%-87% (Leichsenring, 2001; Hofmann et al., 2013).

**Generalized Anxiety Disorder**

A large trial of CBT for generalized anxiety disorder was conducted by Gould and colleagues (1997). Findings from the trial indicated that CBT was substantially superior to waitlist or no-treatment controls, nondirective therapy, and pill placebos. Gould and colleagues (1997) found similar levels of improvement between CBT and pharmacotherapy from pre to post treatment, however effects of CBT showed greater maintenance through at least 6 months of post-treatment over the effects of pharmacotherapy. These results were supported by a study examining follow-up effects of CBT for depression over 3, 6, and 12 months (DeRubeis & Crits-Cristoph, 1998). Additional studies indicate positive effects of CBT for as long as 8-10 years following treatment (Durham et al., 2003).

A study comparing internet-based CBT and psychodynamic therapy found 44.4% response on the PSWQ for the CBT group compared with 29.6% for the psychodynamic group (Andersson et al., 2012). Additionally, in a study by Cuijpers and colleagues (2014), effect sizes using Hedge’s g confirmed CBT for generalized anxiety disorder was superior to applied
relaxation, psychodynamic therapy, and supportive therapy (Hedge’s g = 0.19; 0.46; 0.48, respectively).

_Panic Disorder_

Standard cognitive behavioral treatments for panic disorder include combining cognitive restructuring with interoceptive exposure. Studies that used a standard CBT protocol for panic disorder (both cognitive restructuring and exposure to external and internal cues) had the strongest effect size in treating panic disorder compared to various control conditions (es = 0.88) and CBT treatments in general had a larger effect size than medication (es= 0.68 vs. 0.47; Gould et al., 1995; Butler et al., 2006).

_Social Anxiety Disorder_

Several studies indicated CBT to be more effective in the treatment of social anxiety disorder than placebo and waitlist conditions (Feske & Chambless, 1995; Gould et al., 1997; Butler et al., 2006; Acarturk et al., 2009). Similar results were also found for interventions using exposure alone in the absence of cognitive restructuring (Butler et al., 2006). In a meta-analysis conducted by DeRubeis and Crits-Cristoph (1998), CBT treatment gains were maintained over long-term follow-ups in five large clinical trials and results were supported in a meta-analysis conducted by Acarturk and colleagues (2009).

_Obsessive-compulsive disorder_

CBT treatments for OCD have proven to lead to significant reductions in OCD symptoms as rated by both patients and clinical assessors (van Balkom et al., 1994). Additionally, the effects of treatment lasted over 6- and 12-month follow-up periods (Butler et al., 2006).

_Posttraumatic stress disorder_
Studies conducted by the Royal College of Psychiatrists and the British Psychological Society in 2005 found trauma-focused CBT to be more effective over waitlist control groups on all measures of PTSD symptoms (es = 1.49). Trauma-focused CBT also effectively reduced symptoms of anxiety and depression in PTSD patients (Butler et al., 2006).

**Specific Phobias**

Specific phobias are among the most common psychological disorders (Kessler et al., 2005). Cognitions and behavioral avoidance are among the leading maintaining factors of specific phobias (Thorpe & Salkovskis, 1995), and therefore, cognitive behavioral therapy is the gold-standard treatment for specific phobias (Hood & Antony, 2012). CBT for specific phobias is indicated as more effective than no treatment or waitlist controls (Craske & Rowe, 1997) and when CBT was compared to a placebo treatment, the comparison yielded a moderate effect at post-treatment and large effect at follow-up (d=0.48, p<0.001; Wolitzky-Taylor et al., 2008). When CBT was compared with non-exposure treatments, CBT resulted in greater improvement at post-treatment (d=0.44, p<.001) and follow-up (d=0.35, p<.001; Wolitzky-Taylor et al., 2008).

While the data mentioned above indicates CBT to be superior to several other treatments, placebos, and waitlist controls, there is evidence that not every individual benefits from CBT (10-30% nonresponse; Craske, 1999; Culver, Stoyanova, & Craske, 2012; Loerinc et al., 2015). Also, among those who do benefit, fear responses can return (Craske & Mystkowski, 2006). Cognitive behavioral therapy may eliminate fearful responding, however, the original fear learning is still present and can be elicited by changing test context (renewal), presentation of an uncued aversive US (reinstatement), or passage of time (spontaneous recovery; Vervliet, Craske, & Hermans, 2014). The fact that fear memories remain in tact even following exposure can become problematic clinically. Individuals may undergo cognitive behavioral therapy for anxiety
disorders and experience relapse. Thus, further investigations are needed for enhancing the
effects of CBT interventions to increase response rates. Improved interventions will allow for
greater success following treatment for anxiety disorders and will hopefully decrease the
frequency of relapse. The issue of improving cognitive behavioral interventions for anxiety and
depressive disorders raises questions as to how treatments can be tailored to symptoms that are
more characteristic of each individual in addition to identifying moderators and mediators that
predict treatment outcome (Kazdin, 2014).

One topic of moderation investigated in recent studies compared CBT to acceptance and
commitment therapy, a mindfulness/acceptance based approach, for the treatment of anxiety
disorders. For social anxiety disorder, it has been found that lower self-reported psychological
flexibility was associated with greater improvement at follow-up in CBT and that extremes on
self-reported fear of negative evaluation were associated with superior outcomes from CBT and
inferior outcomes from acceptance and commitment therapy (Craske et al., 2014). In an earlier
study, it was found that baseline beliefs about anxiety (i.e., anxiety sensitivity) and comorbid
depression were moderators of the same two behavioral treatment approaches implemented for a
sample with mixed anxiety disorders (Wolitzky-Taylor et al., 2012). Specifically, those with
comorbid depression had superior outcomes from acceptance and commitment therapy and those
with moderate levels of anxiety sensitivity and without comorbid depression had superior
outcomes from CBT (Wolitzky-Taylor et al., 2012). Meuret et al. (2010) found that greater
cognitive misappraisals of anxiety symptoms predicted poorer outcomes from cognitive therapy
for panic disorder than lower levels of cognitive misappraisals.

As evidenced above, specific moderators influence outcome in both cognitive behavioral
therapy and acceptance and commitment therapy (ACT). However, many individuals present to
Barriers to Dissemination and Implementation

Additionally, outpatient treatment for anxiety and depression can be expensive and a barrier to treatment implementation (Barlow et al., 1999). Depression and anxiety are common disorders and can be a significant financial cost to individuals seeking outpatient treatment (Churchill et al., 2001). While cognitive behavioral therapy has been found to be the most effective and cost-effective intervention for anxiety disorders and depression, outpatient sessions can be costly and require individuals to pay substantial amounts of money weekly. Furthermore, empirically supported interventions such as CBT have been developed for a variety of anxiety and depressive disorders, however are not being routinely delivered in clinical care (Shafran et al., 2009). In addition, when patients in routine clinical care are receiving evidence-based interventions, there is evidence that the interventions are not being delivered optimally (Shafran et al., 2009). According to Shafran and colleagues (2009), optimal delivery of CBT interventions include that the intervention is delivered using evidence-based guidelines with a minimum of eight sessions. In an examination of the National Comorbidity Survey Replication for mood disorders (Kessler et al., 2007), only 20.9% of individuals with 12-month Major Depressive Disorder were considered to have received gold-standard cognitive behavioral interventions for their symptoms. Additionally, in a study of OCD treatment, 60% of individuals who reported treatment with comorbid anxiety and depression (Alloy et al, 1990), and clinicians are faced with the decision of whether to choose a CBT or ACT based treatment approach. While several recent studies have compared CBT and ACT effectiveness for anxiety disorders (Arch et al., 2012; Niles et al., 2014; Craske et al., 2014), few studies have combined CBT and principals from other treatment modalities for the treatment of anxiety and depressive symptoms.
receiving CBT did not meet the criteria for optimal delivery (Stobie et al., 2007; Cuijpers et al., 2010).

Proper delivery of CBT is limited for a variety of reasons (Addis, 2002; Barlow, 2004; Barlow et al., 1999; Chorpita & Nakamura, 2004). Several studies indicate that clinicians believe research trials to have little relevance to actual clinical practice (Cuijpers et al., 2010). Second, therapists believe that the therapist-client relationship is more important in determining outcome than specific evidence-based protocols (Cuijpers et al., 2010). Third, the therapist’s negative beliefs about the protocol in addition to believing that they are actually conducting the evidence-based protocol are barriers to dissemination (Addis, 2002; Barlow, 2004; Barlow et al., 1999; Chorpita & Nakamura, 2004; Cuijpers et al., 2010).

**Effectiveness of Self-Guided CBT**

Based on the aforementioned limitations to implementation of CBT interventions by clinicians, there is room for research to move in the direction of internet-based and self-help delivery (i.e., self-guided) of treatment for anxiety and depression. While internet-based, self-help delivery of CBT is comparable in efficacy to outpatient CBT programs, it has also proven to be more cost-effective and easily disseminated to individuals (Cuijpers et al., 2010).

Traditional self-guided CBT interventions are treatments in which there is minimal contact from the therapist. Treatment procedures are typically written down, presented in an audio file, or presented via the internet. Patients are instructed to work through the procedures independently while therapists give minimal support through brief contacts via telephone or email (Cuijpers et al., 2010). Cuijpers and colleagues (2010) conducted a meta-analysis of randomized controlled trials to compare the effects of self-guided treatment on depression and
anxiety with traditional face-to-face psychotherapy. Results indicated that there were no differences in effectiveness between guided self-help interventions and traditional face-to-face cognitive behavioral interventions. Similarly, no differences were found in any follow-up periods up to one year. Drop out rates also did not differ between guided self-help interventions with minimal therapist contact and traditional face-to-face interventions (Cuijpers et al., 2010).

Hedman and colleagues (2012) conducted a systematic review examining studies that compared internet-based self-guided cognitive behavioral therapy to standard face-to-face cognitive behavioral therapy. Internet-based treatments have been well-established for depression, social anxiety, and panic disorder and these findings were replicated with large effect sizes in the treatment of depression, anxiety disorders, severe health anxiety, irritable bowel syndrome, sexual dysfunction, eating disorders, cannabis use, and pathological gambling. Comparing results to CBT indicated that internet-based CBT was equivalent to face-to-face CBT and was 50% more cost effective than face-to-face CBT. Additionally, internet-based CBT was found to be more easily disseminated (Hedman et al., 2012; Williams & Andrews, 2013; Andrews & Williams, 2015).

As mentioned above, self-guided treatments for anxiety and depression have been found to be equally as effective as traditional face-to-face CBT. In addition to effectiveness, self-guided CBT has several advantages (van’t Hof, Cuijpers, & Stein, 2009). Self-guided interventions save therapist time. Traditional face-to-face CBT requires time consuming planning, interventions, and note writing. Self-help methods require less time from the therapist, therefore creating a more cost-effective therapy, giving the therapist the ability to see more patients over a given amount of time. Research has indicated that the number of therapy sessions for Major Depressive Disorder can be reduced by at least 50% if a computer-assisted therapy is
used rather than weekly traditional face-to-face therapy (van’t Hof, Cuijpers, & Stein, 2009). Additionally, there are many benefits of using self-help methods for patients at home, for it gives them the ability to work at his/her own pace and can reduce a client’s beliefs about stigma of therapy (Klein et al., 2008). Working at home saves traveling and therapy cost and may be the first step for someone before joining more formal face-to-face treatment. Working on therapy from home is also convenient for individuals who do not have access to a therapist due to residential location (i.e., rural settings; van’t Hof, Cuijpers, & Stein, 2009).

van’t Hof and colleagues (2009) list a number of advantages of self-guided therapies. One of the advantages is that privacy is inherently incorporated within these therapies. Patients may be hesitant to share information with his/her therapist, and therefore the degree to which patients are willing to share may increase with the privacy and confidentiality of self-guided treatment interventions. Patients with social anxiety disorder in particular may initially find it more comforting to share information with a computer or self-help book rather than a face-to-face interaction with a therapist. Computerized interventions reduce the possibility of therapist error during sessions and can increase motivation with interesting and appealing audiovisual graphics. Furthermore, progress can be easily monitored with daily questionnaires via email or other electronic sources. Symptom measurement can be constant with the quick, brief measurement of daily monitoring. Symptom reduction can be caught earlier with daily measurement and is more sensitive to change. Finally, patients with anxiety disorders may be more likely to avoid face-to-face therapy contact due to their avoidance of feared stimuli. For example, individuals with social anxiety may be more likely to avoid contact with a therapist and individuals with OCD may be less likely to enter a psychologist’s office due to the belief that the office is contaminated (van’t Hof, Cuijpers, & Stein, 2009).
Newman & colleagues (2003) conducted a study examining whether human contact is necessary for self-guided treatment effectiveness. Research suggests that the therapeutic alliance is a crucial predictor of therapy outcome, and the degree to which therapists have contact with clients in self-guided interventions varies greatly. This study examined how much therapist contact is needed for positive therapy outcomes. They reviewed literature on anxiety disorder treatments that used self-help, self-administered, and decreased therapist-contact interventions. Results indicated that minimal-contact therapies had the greatest response to treatment for the widest variety of anxiety disorders (Newmant et al., 2003). This finding suggests that some contact by the therapist (whether via telephone, email, internet) is necessary for achieving the best outcomes for anxiety disorder treatments (Newman et al., 2003) and is essential in reducing dropout (Berger et al., 2011; Titov et al., 2008).

**Research Domain Criteria (RDoC) Initiative**

Above, the effectiveness of traditional face-to-face cognitive behavioral therapy for anxiety disorders and depression is discussed in addition to the effectiveness and benefits of self-guided/self-administered cognitive behavioral therapy. Research has traditionally characterized individuals by disorders diagnosed by the DSM and ICD based on symptom presentation and distress and interference caused by the disorder. However, recent problems with this method of identifying diagnoses have been documented (Insel et al., 2010). Diagnostic categories based on consensus from the DSM or ICD do not appropriately align with findings from clinical neuroscience or genetics, have not been accurate predictors of treatment response, and may not acknowledge underlying mechanisms of dysfunction due to the reliance upon symptoms (Insel et al., 2010). In the medical field, disorders that were once considered to be unitary based on
clinical presentation have resulted in heterogeneous laboratory results, and physicians typically use biomarkers to inform specific treatments. Additionally, psychological disorders that were once thought to be distinct based on symptom manifestation (e.g., anxiety disorders and depression), may result from the same etiology and stem from dysregulation of the same higher order constructs (Insel et al., 2010; Brown, 2007). Recent research by Barlow and colleagues (2012) suggests that higher order constructs such as anxiety sensitivity and behavioral inhibition underlie all anxiety disorders and are considered transdiagnostic processes of anxiety disorders and depression. In turn, distinct disorders that share the same underlying constructs may be able to be treated by a single treatment that targets these underlying constructs, rather than targeting symptoms of the disorders themselves.

Decades of research have recognized the need for a classification system based on genes, neuroscience, and clinical observation to improve treatment outcomes. The National Institute of Mental Health (NIMH) has recently undertaken this challenge and is launching the Research Domain Criteria (RDoC) to create a research framework for pathophysiology based on genes and neuroscience (Insel et al., 2010). The RDoC initiative is meant to incorporate data on pathophysiology that will allow for the identification of new targets for treatment development and detection of subgroups for treatment selection. Finally, the RDoC initiative is intended to provide a better connection of research findings to clinical decision-making (Insel et al., 2010).

Insel et al. (2010) describes the three assumptions of RDoC as follows: 1) mental illnesses are brain disorders and can be thought of as disorders of brain circuitry; 2) dysfunction in neural circuits can be identified using clinical neuroscience (e.g., electrophysiology, fMRI); and 3) data from genetics and neuroscience impacts clinical symptoms and informs clinical management. Examples include fear and extinction, reward and threat processing, executive
function, and impulse control. Currently, RDoC is most useful for researchers and less useful for clinicians due to its relevance to higher order constructs such as temperament rather than specific clinical diagnoses. Clinicians focus on specific diagnoses when treating patients, following specific protocols for each diagnosis. One of the goals of the current study, in addition to a goal of RDoC in general, is to apply this theory to psychological interventions in order to move away from diagnosis-specific protocols and use higher-order constructs to improve outcome. RDoC focuses on neural circuitry with levels of analysis going upwards (to clinically relevant information) or downwards (to genetic and molecular factors; Insel et al., 2010). All levels of analysis are seen as impacting both the biology and psychology of mental illness. In conjunction with the goals of RDoC, the current study aims to incorporate principles from RDoC to maximize treatment effectiveness in individuals with deficits in reward sensitivity.

Individuals with depression typically experience anhedonia, which is characterized by an unwillingness to work harder for rewards (Dillon et al., 2014). This deficit is related to dysfunction in dopamine networks extending from the VTA/SN into the striatum and in dACC circuitry involved in the integration of reinforcement history and decision-making (Dillon et al., 2014). Knowledge regarding the neurocircuitry of depression can influence the clinical utility of RDoC. While individuals diagnosed with depression based on the DSM or ICD meet criteria for certain symptoms, individuals with deficits in reward processing may not meet diagnostic criteria for depression, however would benefit from depression treatments. Anhedonia is the result of a reward-processing pathology, in that individuals with anhedonia report a reduction in enjoyment when asked to rate prospective, retrospective, or hypothetically pleasant experiences (Treadway & Zald, 2013; Strauss & Gold, 2012). This deficit in reward processing does not allow individuals to enjoy pleasant experiences or anticipate future pleasant experiences (Treadway &
Zald, 2013). This supports the initiative to focus on the RDoC principal on many aspects of reward processing (approach motivation, reward learning, reinforcement) in clinical practice (Dillon et al., 2014). Therefore, utilizing the principles associated with RDoC in the development of a novel intervention to treat deficits in reward sensitivity is necessary in moving the field towards more dimensional treatment of depression and anxiety.

**Single-Case Designs**

A method to optimize clinical practice and treatment effectiveness is to examine symptom change in individuals on a person-to-person basis using a single-case design. Single case designs are used to monitor daily symptom change in individuals to optimize interventions and improve the utility of personalized medicine (Dallery & Raiff, 2014). Single case designs in clinical practice can help ensure that a specific intervention is working, by monitoring individual data and assessing symptom change. Broadly, this can inform and optimize behavioral health interventions (Dallery & Raiff, 2014). Most commonly, treatment research focuses on randomized controlled trials which are both slow and costly and lack the ability to identify individual differences. Focusing more on individual differences between patients can implicate the tailoring of treatments to individualized needs and can lead to greater changes in behavior (Dallery & Raiff, 2014).

Single case designs include methodology in which each individual serves as his/her own control and can be applied to any health intervention. The studies include repeated, daily assessment of behavior and manipulation of the independent variable. Specifically, multiple baseline designs are studies that utilize baselines of different durations in a staggered fashion. After a designated length of baseline, an intervention is introduced and is evaluated for
effectiveness based on symptom change only after the intervention has begun. Multiple-baseline designs are useful for interventions that teach skills that are intended to change behavior (Dallery & Raiff, 2014) after a stable baseline period.

Multiple baseline designs allow researchers to make strong conclusions about the cause of behavior change (Barlow & Hersen, 1984; Barlow, Nock, & Hersen, 2009), and researchers can be confident about treatment effectiveness (Barlow & Hersen, 1984; Barlow, Nock, & Hersen, 2009). All multiple baseline designs involve an AB phase change delivered in a staggered method over time, allowing for researchers to draw conclusions about the internal validity of an intervention (Rizvi & Nock, 2008).

**Study Aim and Hypotheses**

Taking the evidence from CBT and self-help effectiveness research and the RDoC approach to psychopathology, this study seeks to examine the effectiveness of a self-guided approach to the treatment of deficits in reward sensitivity. Using components from cognitive behavioral therapy and other empirically supported therapeutic strategies, the current study will incorporate modules utilizing behavioral activation, cognitive restructuring (attending to the positive), and cultivating the positive through loving kindness/compassion exercises to test a novel approach in the reduction of depression and anxiety. It is hypothesized that 1) symptoms of depression and anxiety will remain stable during the designated baseline period and 2) symptoms of depression and anxiety will decrease following the implementation of the self-guided treatment approach.

**Interventions Targeting Deficits in Reward Sensitivity**
Behavioral activation has long been known as an effective treatment for depression (Hopko et al., 2003). Behavioral activation is defined as a therapeutic intervention that uses strategies to increase behavior in which patients will come into contact with reinforcing contingencies, resulting in better mood, thoughts, and quality of life. Depressive behavior increases as a result of environmental contingencies that decrease the rate of healthy behaviors and increases avoidance of certain stimuli (Ferster, 1973; Hopko et al., 2003). Originally, behavioral activation was used to increase the modification of the environment to improve the patient’s ability to access reinforcing events and activities. These interventions included problem-solving skills training, contingency management, and self-instructional training (Lewinsohn et al., 1986). Newer protocols of behavioral activation are mindful of individual case conceptualizations in the implementation of behavioral activation exercises. Rather than pleasant activity scheduling alone, interventions are now giving more attention to the idiographic nature of each individual’s specific environmental contingencies to try to understand the functional aspects of behavior change (Jacobson et al., 2001; Lejuez et al, 2001; Hopko et al., 2003; Martell et al., 2001). This approach involves detailed assessment of the patient’s needs and goals and targets behavior that will be most rewarding in terms of meeting the patient’s reported goals and improving quality of life. Furthermore, modern behavioral activation approaches have adopted an acceptance and change model (Hayes, Strosahl, & Wilson, 1999; Hopko et al., 2003). In this model, behavioral activation teaches patients to participate in behavioral goals regardless of negative thoughts and mood states they may experience prior to, or throughout the exercise. This allows the patient to not have to control and change thoughts and mood directly (Hopko et al., 2003).
In a meta-analysis by Cuijpers, van Straten, & Warmerdam (2007), the effectiveness of behavioral activation for symptoms of depression was investigated. The authors incorporated 16 studies with a total of 780 subjects, and found a large effect (0.87) when comparing behavioral activation with the control conditions. In 10 of 16 studies, behavioral activation was compared to cognitive therapy, and the effect size elucidating the difference between the two treatments was .02, indicating no difference. Additionally, the effects of behavioral activation were maintained from post-treatment to follow-up and the differences between behavioral activation and cognitive therapy remained non-significant at follow-up (Cuijpers, van Straten, & Warmerdam, 2007).

Thus, the current study incorporates three components in the behavioral activation process: 1) identifying pleasant activities; 2) monitoring current engagement in pleasant activities to assess how frequently and to what degree the patient is currently engaging in pleasant events; and 3) scheduling and completing pleasant events of the patient’s choice. Each component is intended to modify the patient’s environment to create contingencies that allow for greater reinforcement from the environment, resulting in an increase in positive mood and positive behavior. This treatment tailors behavioral activation with greater focus on experiencing reward through detailed recounting of the pleasant experience.

*Cognitive Restructuring (Attending to the Positive)*

Cognitive restructuring was developed as a component of cognitive therapy (Beck, 1976) to target distorted thoughts and beliefs resulting in negative moods and behaviors (Rupke, Blecke, & Renfrow, 2006). It is a treatment strategy that assists patients in correcting negative self-beliefs leading to depression. Research indicates that thoughts precede mood and both influence the individual’s environment, physical sensations, and behaviors. Changing a thought, therefore, can change mood, sensations, and behaviors. The patient must accept that some of
his/her thoughts and interpretations are harmful and false and lead to negative mood. The patient then must be able to recognize negative thoughts (sometimes acknowledging a negative emotion first, then noticing the associated thought), and be able to develop alternative ways of thinking that are more positive (Rupke, Blecke, & Renfrow, 2006).

Dobson (1989) conducted a meta-analysis to examine the effectiveness of Beck’s cognitive therapy for depression (Beck, 1976) in which cognitive restructuring is the key component to the therapy. Dobson (1989) identified 28 studies that used this method of treatment for individuals with depression and compared it with other therapeutic interventions. As indicated by changes on the Beck Depression Inventory (Beck, Steer, & Brown, 1996), cognitive therapy was more effective than no treatment, behavior therapy, pharmacotherapy, and other forms of psychotherapy. Additionally, the mean length of therapy across studies was 14.9 weeks, suggesting that cognitive therapy works quickly in the reduction of depression (Dobson, 1989).

Cognitive restructuring uses a hypothesis testing approach, (Scott, 2001) helping individuals to discover and identify distorted cognitions and beliefs (Beck, 1976; Scott 2001). The intervention can be tailored to individuals using the conceptualization of the patient to identify unique core beliefs that maintain depression (Scott, 2001).

The current study incorporates a unique implementation of cognitive restructuring for individuals with deficits in reward sensitivity (selected based on the RDoC principle). While using strategies known as typical cognitive restructuring, this module of treatment focuses on cognitive skills to increase positive thinking, and it is hypothesized that thinking more positively will result in more positive feelings.

Three types of thinking are common with depression. They are: 1) being unable to recognize the positive; 2) not taking ownership of positive events; and 3) not anticipating
positive events in the future. This treatment will incorporate skills to target the aforementioned deficits with three activities: 1) finding the silver lining in a variety of situations; 2) taking ownership of the positive; and 3) imagining the positives in events.

*Loving-Kindness and Compassion*

Loving-kindness is derived from the Buddhist tradition and involves a state of unselfish and unconditional kindness to all human beings (Hofmann et al, 2011). Loving-kindness, compassion, and sympathetic joy can be cultivated within an individual and are all related to the Buddhist idea that human beings are connected (Buddhaghosa, 1975; Hofmann et al., 2011). It is believed that the cultivation of the states mentioned above gives insight into the workings of the mind to achieve a life free of misery and depression. Without the presence of these states, the presence of negative perceptions or harmful thoughts (e.g., distorted thinking, negative emotions, distressing images) would likely lead to negative core beliefs and a ruminative state free of mindful awareness and positivity (Hofmann et al., 2011). Approaching thoughts and situations with loving-kindness, compassion, and joy allow for individuals to confront difficult emotions with kindness and compassion and increase mindfulness of positives.

Hofmann and colleagues (2011) examined two studies that used loving-kindness and compassion based exercises as an intervention for anxiety and depression. The studies consisted of 12 weekly 2-hour sessions and targeted self-criticism and shame, two common symptoms of anxiety and depression. Participants in each study reported a significant improvement on measures of anxiety, depression, and self-criticism (Gilbert & Proctor, 2006). Additionally, participants reported that they became less persecutory, less malevolent, and more reassuring towards themselves (Gilbert & Proctor, 2006; Hofmann et al., 2011). Furthermore, participants reported less depression and anxiety.
Additional research indicates that self-compassion promotes mental health and mental well-being (Neff, 2003). Individuals who exhibit self-compassion have greater psychological health than those with lower levels of self-compassion due to varying levels of self-criticism (Neff, 2003), isolation (Wood et al., 1990), and fusion with negative thoughts and emotions (Nolen-Hoeksema, 1991). Possessing a supportive attitude toward the self is associated with less depression, less anxiety, and greater life satisfaction (Neff, 2003). Additionally, self-compassion has been evidenced to increase positive behaviors, another strategy to reduce depression. Finally, self-compassion is related to increased clarity and accuracy of self-appraisals. Negative mood associated with depression and suffering can transform into greater positive affect and mood states (Neff, 2003). The final module of this treatment will include four interventions based on loving-kindness and self-compassion: 1) loving-kindness; 2) generosity; 3) gratitude; and 4) appreciative joy.

Taking into account the research described above, this study seeks to examine a novel approach to self-guided treatment utilizing behavioral activation, cognitive restructuring, and cultivating positive emotion for individuals with deficits in reward sensitivity. It is hypothesized that this self-guided modular treatment will reduce symptoms of anxiety and depression, and promote greater engagement in positive activities, positive thoughts, and loving-kindness and compassion. Using a multiple baseline design is key to testing this hypothesis, for after achieving baseline stabilization, each participant’s idiographic change in symptoms can be examined during and following treatment.
Method

Participants

Participants were recruited from those interested in entering the Treatment for Anxiety and Depression study at the UCLA Anxiety and Depression Research Center. The Treatment for Anxiety and Depression is a study designed to examine which individuals with symptoms of anxiety, depression, and stress are more likely to benefit from two versions of evidence-based therapy. Individuals that were interested in becoming enrolled were screened by the study coordinator. This study was referred individuals from the Treatment for Anxiety and Depression study, and once referred, participants were further screened by the principal investigator.

Eligibility Criteria

Participants were screened via telephone and were administered the Depression and Anxiety Stress Scale (DASS; Lovibond & Lovibond, 1995). Participants needed to score at least 11 on the depression subscale to be considered eligible, indicating mild depression. (Lovibond & Lovibond, 1995) was used to assess participants diagnostically. Participants had to meet a clinical diagnosis of depression on the depression module of the SCID. Finally, participants were eligible if they were between the ages of 18 and 65 and stabilized on any psychotropic medications.

Exclusion Criteria

Participants were excluded from the study if they did not meet the cutoffs mentioned above on the DASS and SCID. Additionally, participants were ineligible if they are younger than 18 or older than 65; not stabilized on psychotropic medications; and/or were diagnosed with Bipolar Disorder, Psychotic Disorder, Substance Abuse, or Substance Dependence.
Measures

Depression Anxiety Stress Scales (DASS; Lovibond & Lovibond, 1995). The DASS is a 21-item self-report measure used to assess levels of depression, anxiety, and stress. This scale was used for study eligibility, with participants needing to score at least 11 on the depression subscale (indicating mild depression) to be considered eligible. The depression subscale assesses dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest/involvement, anhedonia, and inertia (Lovibond & Lovibond, 1995). Participants rated items on a 4-point likert scale indicating severity and frequency of symptoms over the past week. Each of the subscales have shown high internal consistently (Lovibond & Lovibond, 1995, 2002). Alpha coefficients are all above 0.85 and validity has been supported by other measures of similar constructs (Antony et al., 1998; Lovibond & Lovibond, 2002).

Structured Clinical Interview for DSM Disorders 5 (SCID; First et al., 1995). The SCID is a diagnostic assessment for capturing symptoms associated with DSM 5 diagnoses. For study eligibility, participants had to meet criteria for depression in the Current Depression module. Modules are separated into diagnostic categories, and each symptom is operationalized as experiencing the symptom at (1) no threshold, (2) subthreshold, or (3) threshold levels (First et al., 1994). This study utilized the mood and anxiety disorder sections of the SCID 5 in addition to the substance use and psychosis modules for inclusionary/exclusionary criteria. Participants were also given clinical severity ratings (CSR) for each diagnosis met using the scale developed by DiNardo, Brown, & Barlow, 1994. The CSR scale ranges from 0-8, with scores of 0-3 indicating subclinical impairment and distress and scores of 4 and above indicating clinically significant impairment and distress (DiNardo, Brown, & Barlow, 1994). The SCID was conducted at pre-treatment by the principal investigator and at post-treatment by a trained.
research assistant who presented each interview to a licensed clinical psychologist for diagnostic consensus.

**Mood and Anxiety Symptoms Questionnaire - Anhedonia Subscale (MASQ-A; Watson, Clark et al., 1995; Watson, Weber et al., 1995).** The MASQ is a 62-item measure of affective symptoms. Participants rate how much they have experienced each of the symptoms during the past week on a 5-point Likert scale. The MASQ is comprised of both an anxious arousal subscale and anhedonic depression subscale. This questionnaire shows strong convergence with other anxiety and depression measures displays good internal consistency for the anhedonic depression subscale (alpha = .89; Watson et al., 1995; Johnson, Bonn Miller et al., 2009).

**Positive Affect Negative Affect Scale – Positive Affect Subscale (PANAS; Watson & Clark, 1988).** The PANAS consists of 20 items and measures the two primary dimensions of mood (Positive Affect and Negative Affect), with items being rated on a 1 to 5 scale (Watson & Clark, 1988).

**The Behavioral Activation for Depression Scale (BADS; Kanter et al., 2012).** The BADS is a 26-item measure that tracks weekly changes in behaviors that are known to underlie depression. It assesses changes in activation, avoidance/rumination, work/school impairment, and social impairment (Kanter et al., 2012). Each item is rated on a 7-point scale ranging from 0 (not at all) to 6 (completely). The scale has good internal consistency and construct and predictive validity (Kanter et al., 2007; Kanter et al., 2009).

**Automatic Thoughts Questionnaire (ATQ; Hollon & Kendall, 1980).** The ATQ is a 30-item measure in which clients are asked to indicate how frequently negative automatic thoughts have occurred in the past week. Each item is measured on a scale of 1 to 5 (1 = not at all, 5 = all the time). Scores range from 30-150, with depression being indicated in the 90-130 range.
(DeRubeis et al., 1990). The ATQ has been found to have good reliability and validity (Hill et al., 1989; Furlong & Oei, 2002).

*Self Compassion Scale* (SCS; Neff, 2003). The SCS is a 26-item measure that examines 6 aspects of self compassion: self kindness, self judgment, common humanity, isolation, mindfulness, and over identification (Neff, et al., 2007). Items are rated on a five point scale from “almost never” to “almost always.” This scale has shown good concurrent validity, convergent validity, and discriminant validity (Neff, 2003; 2005; 2007). This study also utilized the version of this scale that measures compassion towards others.

*Patient Health Questionnaire-2* (PHQ-2; Kroenke et al., 2003). The PHQ-2 is a measure that includes the first two items of the PHQ-9 and examines the degree to which an individual has experienced depression and anhedonia over the previous two weeks. It’s utility is to screen for depression rather than diagnose depression (Kroenke et al., 2003). This measure was included as the daily measurement of depression symptoms in this study and was modified to assess depression over the past 24 hours.

Finally, the following four questions were asked of each participant daily. (1) *Over the past 24 hours, how much have you felt distressed?* (2) *Over the past 24 hours, how much have you felt anxious or fearful?* (3) *Over the past 24 hours, how happy have you felt?* and (4) *Over the past 24 hours, how interested have you felt?*

**Intervention**

*Psychoeducation*

Session 1 consisted of psychoeducation. Participants were oriented to the treatment in addition to how the model of thoughts, feelings, and behaviors contribute to negative mood.
Additionally, participants were explained the rationale of pleasant events scheduling and were assigned to monitor daily activity, to create a list of pleasant events, and to complete one pleasant event from that list.

**Behavioral Activation/Pleasant Events Scheduling**

The current study incorporated three components in behavioral activation/pleasant events scheduling: 1) identifying pleasant activities; 2) monitoring current engagement in pleasant activities to assess how frequently and to what degree the participant is currently engaging in pleasant activities; and 3) scheduling and completing pleasant activities of the participant’s choice. Each component was intended to modify the participant’s environment to create contingencies that allow for greater reinforcement from the environment, resulting in an increase in positive mood and positive behavior. Sessions 2-7 focused on pleasant events scheduling, with each session guiding the participant through detailed explanations of the positive event in addition to mood monitoring prior to, during, and following the event.

**Attending to the Positive**

Sessions 8-10 focused on teaching the participant to attend to the positive. This study incorporated a unique implementation of cognitive restructuring for individuals with deficits in reward sensitivity (selected based on the RDoC principle). While using strategies known as typical cognitive restructuring, this module of treatment focused on cognitive skills to increase positive thinking. Three types of thinking are common with depression. They are: 1) being unable to recognize the positive; 2) not taking ownership of positive events; and 3) not anticipating positive events in the future. This treatment incorporated skills to target the aforementioned deficits with three activities: 1) finding the silver lining in situations; 2) taking ownership of the positive; and 3) imagining the positives in events.
Cultivating Positive Emotions

The final module of this treatment (sessions 11-14) included four interventions based on loving-kindness and self-compassion: 1) loving-kindness; 2) generosity; 3) gratitude; and 4) appreciative joy. Each module taught a unique way to elicit self-compassion and positive emotions towards others and the self. Relapse prevention was discussed during session 15.

Multiple Baseline Design

A multiple baseline design was utilized to test the effects of the Positive Affect Treatment following a stable baseline period. Each participant was randomized to a 2, 4, or 6 week baseline period prior to treatment administration. During this period, the participants filled out the daily measures and symptoms were monitored for stability. Following the baseline period, each participant was given a copy of the self-guided treatment and was asked to complete two sessions per week.

Procedure

As mentioned above, individuals interested in the Treatment for Anxiety and Depression (TAD) study were referred by the TAD study coordinator to participate in this self-guided study. The principal investigator screened interested participants via telephone using the DASS (Lovibond & Lovibond, 1995). If participants scored greater than or equal to 11 on the DASS depression subscale, they were asked to come in to the UCLA Psychology Clinic for a diagnostic interview. The principal investigator conducted the pre-treatment Structured Clinical Interview for DSM 5 Disorders (SCID; First et al., 1995), and if participants met clinically significant criteria for depression on the depression module, they were considered eligible for the study.
Nine participants were recruited for the study and 6 participants completed the study. Once considered eligible, participants were consented and randomly assigned to one of three baseline lengths (two weeks, four weeks, or six weeks). Participants were then given ID numbers and information about Qualtrics, for all questionnaires were administered online. Before beginning treatment, participants completed the pre-treatment questionnaire battery on Qualtrics, consisting of the DASS, MASQ, PANAS, BADS, ATQ, SCS-others, and SCS-self.

Following the assigned baseline period, participants were e-mailed a copy of the Positive Affect treatment manual, which included three modules (see above for descriptions of behavioral activation, cognitive restructuring, and loving-kindness modules). Again, participants were instructed to begin the self-guided treatment at the conclusion of their assigned baseline period (reminders were sent via email). Participants were instructed to complete two sessions per week. Reading material and homework assignments were included in each session. Homework assignments needed to be completed between each session. Each participant had nine weeks to complete the program.

Beginning with the first day of baseline, each participant was instructed to fill out brief daily measures via Qualtrics, lasting approximately 1-2 minutes. The daily measures were emailed to participants each morning at 8am with reminders sent at 5pm each day. The daily measures for the first 4 participants included the PHQ-2 and the following questions: (1) Over the past 24 hours, how much have you felt distressed? (2) Over the past 24 hours, how much have you felt anxious or fearful? (3) Over the past 24 hours, how happy have you felt? and (4) Over the past 24 hours, how interested have you felt?. Participants 5-7 had the question Over the past 24 hours, how much have you felt distressed? removed from the battery.
Once participants completed treatment (within 9 weeks), they were asked to complete a post-treatment questionnaire battery consisting of the same measures (DASS, MASQ, PANAS, BADS, ATQ, SCS-others, and SCS-self) as pre-treatment (for participants 1-4. Participants 5-7 also received this battery following their designated baseline period). Additionally, participants returned to the UCLA Psychology Clinic for a post-treatment SCID, which was conducted by a study coordinator blinded to baseline length.

**Statistical Analysis**

All research questions were addressed using methodology consistent with single-case experimental design (Barlow et al., 2009). More specifically, a multiple baseline design was utilized. This approach frequently assesses a small number of patients to identify individual changes as a function of manipulating the independent variable. This type of analysis is ideal for identifying factors that contribute to a patient’s symptom change and can influence the adaptation of interventions as a function of outcomes. The present study introduced the self-guided treatment after differing lengths of baseline to observe stabilization of symptoms. Thus, it was possible to evaluate the effectiveness of the self-guided PAT intervention on reduction of depression and anxiety symptoms.

The data were analyzed through visual inspection of the magnitude and slope of symptom change at baseline, pre-treatment, and post-treatment. As recommended by Kazdin (2003), a treatment effect was considered significant if the transition between baseline and post-treatment was characterized by a change in slope. Both the daily measures and questionnaire battery at baseline; pre-treatment; and post-treatment were visually inspected to determine symptom change.
Visual inspection was supported by an effect size analysis of the daily measure data to determine change due to treatment administration. This analysis was specifically developed for single-case experimental designs. Effect sizes were calculated by combining values for mean difference $\{MD: \text{mean}(B) - \text{mean}(A)\}$ for each daily measures question. The mean differences were calculated using the observed function in SCRT R package.

Results

Daily Measures

Each participant answered questions regarding their depression, anxiety, happiness, and interest each day beginning after the pre-treatment SCID. Participants 1-3 had an additional question about daily distress included in the daily measures. We decided to drop this item from the first three participants to remain consistent with the entire sample. Additionally, Participants 1-3 answered their daily measures on whole number scales (e.g., 1, 2, 3, 4), whereas participants 4-6 answered their daily measures with continuous scoring, and could select any value (e.g., 1, 1.1, 1.2, etc). We conducted effect sizes analyses for each question in the daily measures to determine whether the treatment was effective within the context of a multiple baseline experimental design. The effect sizes were calculated by combining values for mean difference $\{MD: \text{mean}(B) - \text{mean}(A)\}$ for each daily measures question. The mean differences were calculated using the observed function in SCRT R package. Each scoring system was incorporated into the effect size calculation. The effect sizes can be seen in the table below. Negative mean differences indicate a decrease in symptoms over time and a positive mean differences indicate an increase. Daily symptoms of anxiety and fear resulted in the strongest negative effect size and strongest effect size overall. This indicates that the treatment was most
effective in reducing daily symptoms of fear and anxiety. Additionally, when examining increases in daily positive symptoms, the treatment was most effective in increasing happiness. Overall, effect sizes were small to moderate.

<table>
<thead>
<tr>
<th>Question</th>
<th>Mean Difference</th>
<th>SMD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Little Interest or Pleasure</td>
<td>-0.21</td>
<td>Inf</td>
</tr>
<tr>
<td>Down/Depressed</td>
<td>-0.33</td>
<td>Inf</td>
</tr>
<tr>
<td>Anxious/Fearful</td>
<td>-0.40</td>
<td>-0.68</td>
</tr>
<tr>
<td>Happy</td>
<td>0.32</td>
<td>0.64</td>
</tr>
<tr>
<td>Interested</td>
<td>0.17</td>
<td>0.47</td>
</tr>
</tbody>
</table>

Overall, multiple baseline experimental designs are intended to show that symptom change is a result of treatment administration rather than the passage of time. Optimally, results should indicate stability of symptoms during the baseline period, and reduction of symptoms following the administration of treatment. Overall, results from this study vary in terms of the pattern of symptom change (see below for individual results). Daily symptoms of anxiety and depression appeared to vary over the course of the study. While the overall results did not indicate that symptoms remained stable during baseline and reduced during the intervention, Participant 6’s data remained stable (or worsened) from pre-treatment to post-baseline, and there was a decrease in anhedonia, depression, and anxiety over the course of the intervention. Additionally, Participant 6 had an overall increase in happiness and interest as a result of the intervention (see below for graphs).

**Questionnaires**

Participants 1-3 completed a battery of questionnaires at pre-treatment and post-treatment and Participants 4-6 completed the same battery of questionnaires at pre-treatment, post-baseline,
and post-treatment. The questionnaires were intended to capture a variety of constructs related to anxiety, depression, stress, and self-compassion. Results indicate that the self-guided intervention generally reduced symptoms of anxiety and depression and increased measures of behavioral activation and compassion. We characterized significant symptom change by examining changes in slope on each measure from pre- to post-treatment. Additionally, we calculated percent reduction of symptoms on each measure (see Table 2 below). Table 2 includes percent reduction (or increase) for all participants on all measures given in the questionnaire battery. Overall, participants exhibited percent reduction on measures of negative thoughts; symptoms of depression, anxiety, and stress; and negative affect. Participants exhibited increases in behavioral activation, compassion towards others, positive affect, and self-compassion. Negative thoughts measured on the ATQ had the greatest mean percent reduction across participants.

**SCID**

Finally, all participants were administered a SCID at pre and post-treatment to determine diagnoses and severity of diagnoses. All participants exhibited a reduction in depression and anxiety clinical severity ratings following treatment. This indicates that depression and anxiety disorder diagnoses decreased in distress and impairment severity. Specific diagnoses and scores are documented below.

**Completed Participants**

*Participant 1*
Participant 1 is a 52 year old Caucasian male who self-referred to this study due to ongoing depression and general and health-related anxiety. At pre-treatment, the participant reported that he has his Ph.D. in Linguistics and his J.D., however was currently unemployed due to depression and anxiety. He reported feeling down and depressed with associated anhedonia, and felt unmotivated to engage in activities such as hiking and looking for a job. On the pre-treatment SCID, the participant was diagnosed with Major Depressive Disorder (MDD) CSR 4, Generalized Anxiety Disorder (GAD) CSR 6, and Somatic Disorder (SOM) CSR 6. He was randomized to a 2-week baseline period.

Daily Measures: The participant answered five questions daily to measure changes in depression, anhedonia, anxiety, happiness, and interest over the course of the treatment to help determine whether symptom change occurred as a result of the implementation of the intervention. The participant’s answers did not reflect stability during baseline followed by a change in symptoms during the intervention. His graphs are below. Each graph corresponds with the following questions: 1) Over the past 24 hours, how much have you been bothered by little interest or pleasure in doing things? 2) Over the past 24 hours, how much have you been bothered by feeling down, depressed, or hopeless? 3) Over the past 24 hours, how much have you felt anxious or fearful? 4) Over the past 24 hours, how happy have you felt? 5) Over the past 24 hours, how interested have you felt?
Questionnaires: Participant 1 completed a battery of questionnaires to measure several factors related to depression, anxiety, stress, and self-compassion. On the ATQ, higher scores indicate greater frequency of negative thoughts. Scores range from 30 – 150. Participant 1 scored 82 and 55 at pre-treatment and post-treatment, respectively, indicating a 32.9% decrease in negative thoughts. On the BADS, higher scores indicate greater behavioral activation. Scores range from
Participant 1 scored a 55 and 52 at pre-treatment and post-treatment, respectively, indicating a 5.5% decrease in behavioral activation. Higher scores on the SCS-others indicates more compassion towards others. Scores are calculated by taking the mean of each of 6 scales and then computing a total mean. Participant 1 had means of 2.79 and 3.58 at pre-treatment and post-treatment, respectively, indicating a 28.3% increase in compassion towards others. The DASS has subscales that measure levels of depression, stress, and anxiety. Higher scores indicate higher levels in each construct. Participant 1 had depression scores of 22 and 8, stress scores of 19 and 3, and anxiety scores of 13 and 4, all at pre-treatment and post-treatment, respectively. This indicates a 63.6% reduction of depression, an 84.2% reduction in stress, and a 69.2% reduction in anxiety. On the MASQ, Participant 1 scored a 159 at pre-treatment and a 117 at post-treatment, resulting in a 26.4% decrease in mood and anxiety symptoms. On the PANAS, higher scores indicate high positive and negative affect. This participant scored a 29 and 21 on the positive affect scale at pre- and post-treatment, respectively and a 26 and 21 on the negative affect scale at pre- and post treatment respectively. This indicates both a 27.5% reduction in positive affect and a 19% reduction in negative affect. Finally, on the self-compassion scale, a total mean is calculated from six subscales. Participant 1 had a mean of 2.48 at pre-treatment and 2.51 at post-treatment, indicating a 1.2% increase in self-compassion. Following the completion of the treatment, Participant 1 was re-administered the SCID and received MDD OS CSR 4, GAD CSR 4, and Somatic Disorder CSR 3.

In sum, Participant 1 had a decrease in negative thoughts; behavioral activation; symptoms of depression, anxiety, and stress; and positive and negative affect. Participant 1 had an increase in self-compassion and compassion towards others. Finally, at post-treatment,
Participant 1 no longer met full criteria for MDD, and decreased in diagnosis severity of Depression, Generalized Anxiety Disorder, and Somatic Disorder.
Participant 2

Participant 2 is a 53 year old Caucasian female who self-referred to this study due to ongoing depression and panic-related anxiety. At pre-treatment, the participant reported that she is a freelance writer in the film industry, but was having difficulty submitting material for work due to her depression and panic symptoms while driving. The participant stated that due to the location of her home, she would need to drive at least one hour for meetings. Avoidance of panic symptoms resulted in the participant avoiding driving on freeways, making it difficult to obtain freelance jobs. She reported feeling anxious about her panic symptoms, which resulted in ongoing symptoms of depression. On the pre-treatment SCID, the participant was diagnosed with Major Depressive Disorder CSR 5 and Panic Disorder CSR 5. She was randomized to a 6-week baseline period.

Daily Measures: The participant’s answers did not reflect stability during baseline followed by a change in symptoms during the intervention. Her graphs are below. Each graph corresponds with the following questions: 1) Over the past 24 hours, how much have you been bothered by little interest or pleasure in doing things? 2) Over the past 24 hours, how much have you been bothered by feeling down, depressed, or hopeless? 3) Over the past 24 hours, how
4) Over the past 24 hours, how happy have you felt? 5) Over the past 24 hours, how interested have you felt?
Questionnaires: On the ATQ, Participant 2 scored 95 and 100 at pre-treatment and post-treatment, respectively, indicating a 5.3% increase in negative thoughts. On the BADS, Participant 2 scored a 59 and 86 at pre-treatment and post-treatment, respectively, indicating a 45.8% decrease in behavioral activation. Participant 2 had means on the SCS-others of 2.70 and 2.65 at pre-treatment and post-treatment, respectively, indicating a 1.9% decrease in compassion towards others. On the DASS, Participant 2 had depression scores of 16 and 17, stress scores of 14 and 16, and anxiety scores of 14 and 11, all at pre-treatment and post-treatment, respectively. These results indicate a 6.3% increase in depression, a 14.2% increase in stress, and a 21.4% decrease in anxiety. On the MASQ, Participant 2 scored a 159 at pre-treatment and a 129 at post-treatment, resulting in an 18.9% decrease in mood and anxiety symptoms. On the PANAS, this participant scored a 19 and 31 on the positive affect scale at pre- and post-treatment, respectively and a 27 and 18 on the negative affect scale at pre- and post-treatment respectively. This indicates both a 63.2% increase in positive affect and a 33.3% reduction in negative affect. Finally, on the self-compassion scale, Participant 2 had a mean of 1.89 at pre-treatment and 2.73 at post-treatment, indicating a 44.4% increase in self-compassion. Following the completion of the treatment, Participant 2 was re-administered the SCID and scored MDD CSR 2, and Panic Disorder CSR 4.

In sum, Participant 2 had a decrease in behavioral activation, compassion towards others, anxiety symptoms, and negative affect. Participant 2 had an increase in negative thoughts, symptoms of depression and stress, positive affect, and self-compassion. Finally, Participant 2 had a significant reduction in MDD disorder severity, and decreased in Panic Disorder severity by 1 CSR.
Participant 3

Participant 3 is a 40 year old Caucasian female who self-referred to this study due to ongoing depression. At pre-treatment, the participant reported that she owns a bed and breakfast at a ski resort, and is mostly unemployed during the off-season. The participant stated that her depression impairs her relationships and ability to do things she enjoys. On the pre-treatment SCID, the participant was diagnosed with Major Depression Disorder CSR 5. She was randomized to a 4-week baseline period.

Daily Measures: The participant’s answers did not reflect stability during baseline followed by a change in symptoms during the intervention. Her graphs are below. Each graph corresponds with the following questions: 1) Over the past 24 hours, how much have you been bothered by little interest or pleasure in doing things? 2) Over the past 24 hours, how much have you been bothered by feeling down, depressed, or hopeless? 3) Over the past 24 hours, how much have you felt anxious or fearful? 4) Over the past 24 hours, how happy have you felt? 5) Over the past 24 hours, how interested have you felt?
Questionnaires: On the ATQ, Participant 3 scored 93 and 79 at pre-treatment and post-treatment, respectively, indicating a 47.3% decrease in negative thoughts. On the BADS, Participant 3
scored a 76 and 80 at pre-treatment and post-treatment, respectively, indicating a 5.3% increase in behavioral activation. Participant 3 had means on the SCS-others of 3.3 and 2.7 at pre-treatment and post-treatment, respectively, indicating an 18.1% decrease in compassion towards others. On the DASS, Participant 3 had depression scores of 18 and 17, stress scores of 12 and 10, and anxiety scores of 15 and 12, all at pre-treatment and post-treatment, respectively. These results indicate a 5.5% increase in depression, a 16.7% decrease in stress, and a 20% decrease in anxiety. On the MASQ, Participant 3 scored a 143 at pre-treatment and a 134 at post-treatment, resulting in a 6.3% decrease in mood and anxiety symptoms. On the PANAS, this participant scored a 28 and 28 on the positive affect scale at pre- and post-treatment, respectively and a 28 and 23 on the negative affect scale at pre- and post-treatment respectively. This indicates both a 0% increase in positive affect and a 17.9% reduction in negative affect. Finally, on the self-compassion scale, Participant 3 had a mean of 2.03 at pre-treatment and 2.5 at post-treatment, indicating a 23.2% increase in self-compassion. Following the completion of the treatment, Participant 3 was re-administered the SCID and scored MDD CSR 3.

In sum, Participant 3 had a decrease in negative thoughts, compassion towards others, stress and anxiety symptoms, and negative affect. Participant 3 had an increase in behavioral activation, depression symptoms, and self-compassion. Finally, Participant 3 had a decrease in MDD diagnosis severity on the SCID.
Participant 4

Participant 4 is a 37 year old Caucasian female who self-referred to this study due to ongoing depression. At pre-treatment, the participant reported that she was having relationship difficulties with her partner due to her ongoing depression and anxiety. Additionally, the participant stated that she has a hard time making important career decisions due to her anxiety. On the pre-treatment SCID, the participant was diagnosed with Major Depression Disorder CSR 5 and Generalized Anxiety Disorder CSR 5. She was randomized to a 4-week baseline period.

Daily Measures: The participant’s answers generally did not reflect stability during baseline followed by a change in symptoms during the intervention, however, her daily responses regarding anxiety/fear and interest were more indicative of a change during the implementation of the intervention. Following the four week baseline, the participant’s anxiety/fear scores indicate a downward trend, whereas the participant’s interest scores indicate a positive trend. Her graphs are below. Each graph corresponds with the following questions: 1) Over the past 24 hours, how much have you been bothered by little interest or pleasure in doing things? 2) Over the past 24 hours, how much have you been bothered by feeling down, depressed, or hopeless? 3) Over the past 24 hours, how much have you felt anxious or fearful? 4) Over the past 24 hours, how happy have you felt? 5) Over the past 24 hours, how interested have you felt?
Questionnaires: Due to an additional change in procedures, starting with Participant 4, the standard questionnaire battery was administered an additional time following the baseline period to examine stability of symptoms from pre-treatment to post-baseline. The pre-treatment, post-baseline and post-treatment scores are reported here, however, percent reduction is only reported from pre- to post-treatment. On the ATQ, Participant 4 scored 74, 77, and 60 at pre-treatment, post-baseline, and post-treatment, respectively, indicating an 18.9% decrease in negative thoughts. On the BADS, Participant 4 scored a 70, 67, and 87 at pre-treatment, post-baseline, and
post-treatment, respectively, indicating a 24.2% increase in behavioral activation. Participant 4 had means on the SCS-others of 3.0, 2.89, and 3.21 at pre-treatment, post-baseline, and post-treatment, respectively, indicating a 7% decrease in compassion towards others. On the DASS, Participant 4 had depression scores of 17, 15, and 10, stress scores of 23, 21, and 17, and anxiety scores of 15, 14, and 9, all at pre-treatment, post-baseline, and post-treatment, respectively. These results indicate a 41.2% decrease in depression, a 26.1% decrease in stress, and a 40% decrease in anxiety. On the MASQ, Participant 4 scored a 171 at pre-treatment, a 168 at post-baseline, and a 143 at post-treatment, resulting in a 16.4% decrease in mood and anxiety symptoms. On the PANAS, this participant scored a 36, 34, and 49 on the positive affect scale at pre-treatment, post-baseline, and post-treatment, respectively and a 35, 37, and 33 on the negative affect scale at pre-treatment, post-baseline, and post treatment respectively. This indicates both a 36.1% increase in positive affect and a 5.7% reduction in negative affect. Following the completion of the treatment, Participant 4 was re-administered the SCID and scored MDD CSR 2 and GAD CSR 3.

In sum, Participant 4 had a decrease in negative thoughts; compassion towards others; symptoms of depression, anxiety, and stress; and negative affect. Participant 4 had an increase in behavioral activation, positive affect, and self-compassion. Finally, Participant 4 had a significant decrease in both MDD and GAD diagnosis severity.
ATQ

BADS

SCS-others

DASS

MASQ

PANAS
Participant 5

Participant 5 is a 31 year old Caucasian female who self-referred to this study due to ongoing anxiety and depression. At pre-treatment, the participant reported that she was having difficulties with anxiety and depression following a break-up. On the pre-treatment SCID, the participant was diagnosed with Major Depression Disorder CSR 4 and Generalized Anxiety Disorder CSR 5. She was randomized to a 2-week baseline period.

Daily Measures: The participant’s answers did not reflect stability during baseline followed by a change in symptoms during the intervention. Her graphs are below. Each graph corresponds with the following questions: 1) Over the past 24 hours, how much have you been bothered by little interest or pleasure in doing things? 2) Over the past 24 hours, how much have you been bothered by feeling down, depressed, or hopeless? 3) Over the past 24 hours, how much have you felt anxious or fearful? 4) Over the past 24 hours, how happy have you felt? 5) Over the past 24 hours, how interested have you felt?
Questionnaires: On the ATQ, Participant 5 scored 61, 60, and 52 at pre-treatment, post-baseline, and post-treatment, respectively, indicating an 14.8% decrease in negative thoughts. On the BADS, Participant 5 scored a 117, 108, and 118 at pre-treatment, post-baseline, and post-treatment, respectively, indicating a 0.9% increase in behavioral activation. Participant 5 had
means on the SCS-others of 2.69, 2.62, and 2.55 at pre-treatment, post-baseline, and post-treatment, respectively, indicating a 5.2% decrease in compassion towards others. On the DASS, Participant 5 had depression scores of 14, 12, and 12, stress scores of 19, 21, and 12, and anxiety scores of 14, 11, and 9, all at pre-treatment, post-baseline, and post-treatment, respectively. These results indicate a 14.3% decrease in depression, a 36.8% decrease in stress, and a 35.7% decrease in anxiety. On the MASQ, Participant 5 scored a 157 at pre-treatment, a 147 at post-baseline, and a 141 at post-treatment, resulting in a 10.2% decrease in mood and anxiety symptoms. On the PANAS, this participant scored a 38, 35, and 37 on the positive affect scale at pre-treatment, post-baseline, and post-treatment, respectively and a 31, 30, and 28 on the negative affect scale at pre-treatment, post-baseline, and post treatment respectively. This indicates both a 2.6% increase in positive affect and a 9.7% reduction in negative affect. Finally, on the self-compassion scale, Participant 5 had a mean of 3.04 at pre-treatment, 2.73 at post-baseline, and 2.58 at post-treatment, indicating a 15.1% decrease in self-compassion. Following the completion of the treatment, Participant 5 was re-administered the SCID and scored MDD CSR 3 and GAD CSR 3.

Participant 5 had a decrease in negative thoughts; compassion towards others; symptoms of depression, anxiety, and stress; negative affect; and self-compassion. Participant 5 had an increase in behavioral activation and positive affect. Finally, Participant 5 had a significant decrease in MDD and GAD disorder severity on the SCID.
ATQ

BADS

SCS-others

DASS

MASQ

PANA

Depression
Stress
Anxiety
Positive
Negative
Participant 6 is a 34 year old African-American male who self-referred to this study due to ongoing depression and anxiety. At pre-treatment, the participant reported that his depression impacts him at work and results in him feeling unmotivated to apply for new jobs. On the pre-treatment SCID, the participant was diagnosed with Major Depressive Disorder CSR 4 and Generalized Anxiety Disorder CSR 4. He was randomized to a 6-week baseline period.

Daily Measures: The participant’s answers show a downward trend in both anxiety and depression and upward trend in interest. His scores on anxiety/fear and happiness remain relatively stable during the baseline period, and change during the implementation of the intervention. His graphs are below. Each graph corresponds with the following questions: 1) Over the past 24 hours, how much have you been bothered by little interest or pleasure in doing things? 2) Over the past 24 hours, how much have you been bothered by feeling down, depressed, or hopeless? 3) Over the past 24 hours, how much have you felt anxious or fearful? 4) Over the past 24 hours, how happy have you felt? 5) Over the past 24 hours, how interested have you felt?
Anhedonia
Depression
Anxiety/fear
Interested
Happy
Questionnaires: On the ATQ, Participant 6 scored 48, 79, and 55 at pre-treatment, post-baseline, and post-treatment, respectively, indicating an 14.6% increase in negative thoughts from pre- to post-treatment. However, participant 6 exhibited a 30.4% decrease in negative thoughts from post-baseline to post-treatment. On the BADS, Participant 6 scored a 97, 92, and 104 at pre-treatment, post-baseline, and post-treatment, respectively, indicating a 7.2% increase in behavioral activation. Participant 6 had means on the SCS-others of 3.67, 2.71, and 3.67 at pre-treatment, post-baseline, and post-treatment, respectively, indicating no increase in compassion towards others from pre- to post-treatment. However, from post-baseline to post-treatment, this participant had a 35.4% increase in compassion towards others. On the DASS, Participant 6 had depression scores of 5, 12, and 5, stress scores of 8, 20, and 9, and anxiety scores of 5, 13, and 6, all at pre-treatment, post-baseline, and post-treatment, respectively. These results indicate either no difference or increases in scores from pre- to post-treatment. However, due to the participant’s increase in scores from pre-treatment to post-baseline, the post-baseline to post-treatment scores indicate a 58.3% decrease in depression, 55% decrease in stress, and 53.8% reduction in anxiety. On the MASQ, Participant 6 scored a 102 at pre-treatment, a 133 at post-baseline, and a 99 at post-treatment, resulting in a 2.9% decrease in mood and anxiety symptoms. On the PANAS, this participant scored a 18, 17, and 18 on the positive affect scale at pre-treatment, post-baseline, and post-treatment, respectively and a 17, 19, and 19 on the negative affect scale at pre-treatment, post-baseline, and post treatment respectively. This indicates no change in positive affect and an 11.7% increase in negative affect. Finally, on the self-compassion scale, Participant 6 had a mean of 2.08 at pre-treatment, 2.04 at post-baseline, and 2.92 at post-treatment, indicating a 40.4% increase in self-compassion. Following the completion
of the treatment, Participant 6 was re-administered the SCID and scored MDD CSR 2 and GAD CSR 2.

Participant 6 had a decrease in negative thoughts; symptoms of depression, anxiety, and stress; and negative affect. Participant 6 had an increase in behavioral activation, compassion towards others, and self-compassion. Finally, Participant 6 decreased to subclinical levels of both MDD and GAD severity on the SCID.
Table 2. Percent change on primary measures (completers)

<table>
<thead>
<tr>
<th>Participant</th>
<th>ATQ</th>
<th>BAD S*</th>
<th>SCS-others*</th>
<th>DASS</th>
<th>MASQ</th>
<th>PANAS</th>
<th>SCS*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>D</td>
<td>A</td>
<td>S</td>
<td>PA*</td>
</tr>
<tr>
<td>1</td>
<td>32.9</td>
<td>-5.5</td>
<td>28.3</td>
<td>63.6</td>
<td>69.2</td>
<td>84.2</td>
<td>26.4</td>
</tr>
<tr>
<td>2</td>
<td>-5.3</td>
<td>-45.8</td>
<td>-1.9</td>
<td>-6.3</td>
<td>21.4</td>
<td>-14.2</td>
<td>18.9</td>
</tr>
<tr>
<td>3</td>
<td>47.3</td>
<td>5.3</td>
<td>-18.1</td>
<td>-5.5</td>
<td>20</td>
<td>16.7</td>
<td>6.3</td>
</tr>
<tr>
<td>4</td>
<td>18.9</td>
<td>24.2</td>
<td>-7</td>
<td>41.2</td>
<td>40</td>
<td>26.1</td>
<td>16.4</td>
</tr>
<tr>
<td>5</td>
<td>14.8</td>
<td>0.9</td>
<td>-5.2</td>
<td>14.3</td>
<td>35.7</td>
<td>36.8</td>
<td>10.2</td>
</tr>
<tr>
<td>6</td>
<td>30.4</td>
<td>7.2</td>
<td>35.4</td>
<td>58.3</td>
<td>53.8</td>
<td>55</td>
<td>2.9</td>
</tr>
<tr>
<td><strong>Mean</strong></td>
<td><strong>23.2</strong></td>
<td><strong>-2.2</strong></td>
<td><strong>5.3</strong></td>
<td><strong>27.6</strong></td>
<td><strong>40</strong></td>
<td><strong>34.1</strong></td>
<td><strong>13.5</strong></td>
</tr>
</tbody>
</table>

*Indicates measures for which percent increase was calculated. Percent decrease was calculated for all other measures.
Non-completers

Three participants enrolled in, but did not complete the study. The first non-completer is a 40 year-old Caucasian female who self-referred to the study due to depression, anxiety, and emotion dysregulation. This participation decided to drop out of the study after three treatment sessions. The second non-completer is a 38 year-old Caucasian female who self-referred to the study for symptoms of depression. This participant decided to seek traditional face-to-face therapy after completing daily measures for one week. The final non-completer is a 64 year-old Iranian male who self-referred to the study for symptoms of depression. The participant did not complete the study due to a reported severe depressive episode following three weeks of baseline.

Discussion

This study sought to examine the effects of a 15-session self-guided version of Positive Affect Treatment on symptoms of depression and anxiety by utilizing a multiple baseline experimental design. We hoped to reduce symptoms of depression and anxiety by increasing levels of positive affect and decreasing anhedonia. We focused on these two constructs due to the fact that psychological disorders that were once thought to be distinct based on symptom manifestation (e.g., depressive and anxiety disorders), may stem from dysregulation of the same higher order constructs. To date, principles of RDoC have been used primarily by researchers rather than clinicians. Clinicians are trained to treat specific disorders rather than focusing on common constructs that underlie the disorders. Therefore, by focusing on anhedonia and positive affect in the context of a treatment study, we can work on bridging the gap between research and clinical work by making treatment more dimensional.
Multiple baseline experimental designs are intended to look at symptom change on an individual level by assigning different baseline lengths before implementing an intervention. This design is intended to determine whether symptom change is a result of the intervention rather than the passage of time. This study randomized participants to a 2, 4, or 6 week baseline (two participants per baseline). Over the course of the study, symptom change was measured in three ways (daily measures, diagnostic interview [SCID], and questionnaire battery).

The daily measures were intended to capture daily change in symptoms over the course of both the baseline and intervention periods. Five questions were used and asked about anhedonia, depression, anxiety/fear, happiness, and interest and participants rated their answers on a 0-3 scale. The first three participants answered the five questions mentioned above by responding to the 0-3 scale. None of these participants exhibited stable baseline periods followed by changes during the intervention period (see graphs above). We hypothesized that this may be due to the rigidity of the 0-3 scale, not allowing or accounting for participants in which a score of 2.75, for example, would be most accurate. Due to this hypothesis, the researcher changed the scale to a sliding scale in which participants were able to indicate any value between 0 and 3 (0.1, 0.2, etc). This change allowed for a greater range of responses, however the responses for the final three participants still largely did not reflect stability during baseline and symptom change during the implementation of the intervention. Participants 4 and 6 (both using the new response method) were the two participants who exhibited daily symptom change during the implementation of the intervention. Participant 4 showed an increase in interest and a decrease in anxiety, and Participant 6 exhibited a decrease in anhedonia, depression, and anxiety, and an increase in happiness. It is unclear whether the overall lack of a noticeable pattern of daily symptom change is due to the specific questions asked, the scale used to measure the questions,
or the effectiveness of the intervention. However, it is likely that the questions asked were the cause of the inconsistent daily measures. It is likely that the questions were not able to capture the day-to-day fluctuations in depression and anxiety symptoms. Additionally, Participants 1-3 responded to daily measures using a less sensitive scoring system than Participants 4-6 (see explanation in Methods). Zero of the first three participants (less sensitive scoring) showed expected symptom change as compared with two of the final three participants who completed the daily measures with more sensitive scoring methods. As described below, both the questionnaire battery responses and SCID results support the effectiveness of the intervention by exhibiting a reduction in symptoms of depression and anxiety.

The SCID 5 was used as a diagnostic tool to assess for diagnoses and severity at pre- and post-treatment. All participants exhibited a reduction of diagnosis severity using CSRs on the SCID. This indicates that over the course of the study, all participants had a reduction in the severity of their symptoms in addition to a reduction in distress and impairment. While this measure examines reduction of diagnosis severity over time from pre- to post-treatment, it does not measure specific symptom change during different phases of the study (e.g., baseline vs. intervention). Therefore, the SCID does not determine whether symptoms reduced as a function of the intervention or of the passage of time.

The questionnaire battery generally indicated a reduction in negative symptoms associated with depression and anxiety and an increase in positive symptoms associated with symptoms of depression and anxiety. While this was not consistent across all individuals, the overall trend supported the effectiveness of the intervention, based on the examination of percent reduction and percent increase of the primary measures. Participants 1-3 were assessed only at pre- and post-treatment, whereas participants 4-6 were assessed at pre-treatment, post-baseline,
and post-treatment. This adjustment was made due to the rationale behind multiple baseline experimental designs. To be consistent with examining whether symptoms of depression and anxiety remained stable over the course of the baseline period and decreased upon administration of the intervention, we added an additional measurement period following the baseline waiting period. After examining the results, adding the post-baseline assessment timepoint remained consistent with the results from Participants 1-3. In general, the post-baseline results exhibited that the majority of participants had symptoms that remained stable or worsened from pre-treatment to post-baseline, and subsequently decreased from post-baseline to post-treatment. For overall changes in symptoms of depression and anxiety, the DASS exhibited the greatest mean reduction across participants, with the anxiety subscale showing greatest mean reduction (see Table 2 above). More specifically, when examining measures of specific symptoms of depression and anxiety, the ATQ exhibited greatest mean percent reduction across participants (see Table 2 above). This indicates that the self-guided intervention was most successful in decreasing negative thoughts.

Additionally, as mentioned above, three participants elected to drop out of the study. Two of the three participants had more severe diagnosis severity than the other participants, therefore it is hypothesized that this treatment is better suited for individuals with mild to moderate depression and anxiety, and in the absence of personality pathology. While this cannot be definitively concluded from this sample, there is evidence to support that severe depression and personality pathology may create more avoidance and/or chaos in daily life, and therefore success and symptom reduction would be more likely in a traditional face-to-face therapy format.

Finally, four feasibility questions were asked of each participant upon completion of the treatment. The four questions were 1) How feasible was this treatment? 2) What did you like
about this treatment? 3) What did you not like about this treatment? 4) Would you recommend this treatment to others? Overall, participants generally liked that this treatment could be done at any time and from any location. Additionally, it was easy for participants to travel with the treatment and have the workbook for skills reminders and practice throughout the week. Alternatively, not having the accountability of a weekly appointment with a therapist made the self-guided intervention challenging. Several participants stated that it took additional motivation to be able to complete a session, knowing that a therapist would not be holding them accountable or charging them for a missed session. Finally, all 6 participants reported that they would recommend the treatment to others, specifically those who are not financially able to attend therapy and those who are busy and likely unable to keep a weekly appointment.

In conclusion, the self-guided version of Positive Affect Treatment reduced the severity of depression and anxiety diagnoses. Additionally, symptom reduction occurred (primarily a reduction in negative thoughts) as a result of the intervention. In sum, while we typically did not find that symptoms remained stable during the baseline phase and reduced during the intervention period, we did find that symptoms of depression and anxiety decreased overall during the duration of the study. Effect sizes were greatest for the daily reduction of fear/anxiety and the mean symptom change across measures was greatest in the reduction of negative thoughts. When examining overall measures of depression and anxiety, anxiety exhibited the greatest mean reduction as seen on the anxiety subscale of the DASS. The depression and stress subscales of the DASS also had large mean symptom reductions. While results on the daily measures and questionnaires reflect greater change in anxiety symptoms rather than depression, depression and anxiety share several overlapping features, which may have been targeted by the
intervention. For example, negative thoughts maintain both depression and anxiety, and therefore a reduction in negative thoughts will likely reduce both depression and anxiety severity.

The major limitation of the current study includes inconsistent rating scales of the daily measures across participants. It is difficult to examine and compare results of symptom change when rating scales vary. Additionally, due to participant feasibility feedback, this study did not include in-person accountability checks. Participants were contacted once weekly via email, however, in-person visits may increase participant motivation and adherence. Future researchers should continue to examine the questions used in addition to the measurement scales of the daily measures. Alternative questions and/or measurement scales may more accurately capture daily symptom measures of depression and anxiety. Finally, future research should examine how to increase accountability and motivation within self-guided interventions (e.g., participants were not consistent in completing daily measures throughout the entirety of the study). Given the results indicating decreases in depression and anxiety over the course of this self-guided intervention, future studies should continue to examine the effectiveness of this method of treatment delivery and its implications for dissemination.
Appendix

**Automatic Thoughts Questionnaire**

Rate how frequently each thought as occurred in the previous week.

<table>
<thead>
<tr>
<th>Thought</th>
<th>Not at all</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>All the time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The world doesn't like me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. I'm no good.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. Why can't I do anything right?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. No one understands me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. I have let people down.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. I don't think I can go on.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. I wish I were a better person.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8. I'm not strong at all.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9. My life is not going the way I want it to.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10. I’m so disappointed in myself.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11. Nothing feels good anymore.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12. I can't stand this anymore.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13. I can't get anything started.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14. What's wrong with me?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15. I wish I were somewhere else.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>16. I can't get things together.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>17. I hate myself.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>18. I'm not worth anything.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>19. I wish I could just disappear.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>20. What's the matter with me?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>21. I'm a loser.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>22. My life is a mess.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>23. I can't do anything well.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>24. I feel so helpless.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>25. I'll never make it.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>26. Something has to change.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>27. There must be something wrong with me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>28. When I grow up, things will be bad.</td>
<td>29. It's just not worth it.</td>
<td>30. I can't finish anything.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>----------------------------------------</td>
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<td>-----------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
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<td>2</td>
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<td>5</td>
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<td></td>
</tr>
</tbody>
</table>
Behavioral Activation for Depression Scale

Please read each statement carefully and then circle the number which best describes how much the statement was true for you DURING THE PAST WEEK, INCLUDING TODAY.

0 = Not at all  1  2 = A little  3  4 = A lot  5  6 = Completely

I stayed in bed for too long even though I had things to do  1  2  3  4  5  6

There were certain things I needed to do that I didn’t do  1  2  3  4  5  6

I engaged in a wide and diverse array of activities  1  2  3  4  5  6

I made good decisions about what type of activities and/or situations I put myself in  1  2  3  4  5  6

I was active, but did not accomplish any of my goals for the day  1  2  3  4  5  6

I was an active person and accomplished the goals I set out to do  1  2  3  4  5  6

Most of what I did was to escape from or avoid something unpleasant  1  2  3  4  5  6

I did things to avoid feeling sadness or other painful emotions  1  2  3  4  5  6

I tried not to think about certain things  1  2  3  4  5  6

I did things even though they were hard because they fit in with my long-term goals for myself  1  2  3  4  5  6

I did something that was hard to do but it was worth it  1  2  3  4  5  6

I spent a long time thinking over and over about my problems  1  2  3  4  5  6

I kept trying to think of ways to solve a problem but never tried any of the solutions  1  2  3  4  5  6

I frequently spent time thinking about my past, people who have hurt me, and mistakes I’ve made, and other bad things in my history  1  2  3  4  5  6

I did not see any of my friends  1  2  3  4  5  6

I was withdrawn and quiet, even around people I know well  1  2  3  4  5  6
I was not social, even though I had opportunities to be
I pushed people away with my negativity
I did things to cut myself off from other people
I took time off of work/school/chores/responsibilities simply because I was too tired or didn’t feel like going in
My work/schoolwork/chores/responsibilities suffered because I was not as active as I needed to be
I structured my day’s activities
I only engaged in activities that would distract me from feeling bad
I began to feel badly when others around me expressed negative feelings or experiences
Compassion Scale

HOW I TYPICALLY ACT TOWARDS OTHERS
Please read each statement carefully before answering. To the left of each item, indicate how often you behave in the stated manner, using the following scale:

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
</table>

| 1. When people cry in front of me, I often don’t feel anything at all. |
| 2. Sometimes when people talk about their problems, I feel like I don’t care. |
| 3. I don’t feel emotionally connected to people in pain. |
| 4. I pay careful attention when other people talk to me. |
| 5. I feel detached from others when they tell me their tales of woe. |
| 6. If I see someone going through a difficult time, I try to be caring toward that person. |
| 7. I often tune out when people tell me about their troubles. |
| 8. I like to be there for others in times of difficulty. |
| 9. I notice when people are upset, even if they don’t say anything. |
| 10. When I see someone feeling down, I feel like I can’t relate to them. |
| 11. Everyone feels down sometimes, it is part of being human. |
| 12. Sometimes I am cold to others when they are down and out. |
| 13. I tend to listen patiently when people tell me their problems. |
| 14. I don’t concern myself with other people’s problems. |
| 15. It’s important to recognize that all people have weaknesses and no one’s perfect. |
| 16. My heart goes out to people who are unhappy. |
| 17. Despite my differences with others, I know that everyone feels pain just like me. |
18. When others are feeling troubled, I usually let someone else attend to them.

19. I don’t think much about the concerns of others.

20. Suffering is just a part of the common human experience.

21. When people tell me about their problems, I try to keep a balanced perspective on the situation.

22. I can’t really connect with other people when they’re suffering.

23. I try to avoid people who are experiencing a lot of pain.

24. When others feel sadness, I try to comfort them.
## Daily Measures

### The Patient Health Questionnaire- 2 (PHQ-2)

<table>
<thead>
<tr>
<th>Over the past 24 hours, how much have you been bothered by any of the following problems?</th>
<th>Not at all</th>
<th>Some of the time</th>
<th>Half of the time</th>
<th>The whole time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Little interest or pleasure in doing things</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2. Feeling down, depressed, or hopeless</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Over the past 24 hours, how much have you felt anxious or fearful?</th>
<th>Not at all</th>
<th>Some of the time</th>
<th>Half of the time</th>
<th>The whole time</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Over the past 24 hours, how happy have you felt?</th>
<th>Not at all</th>
<th>Some of the time</th>
<th>Half of the time</th>
<th>The whole time</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Over the past 24 hours, how interested have you felt?</th>
<th>Not at all</th>
<th>Some of the time</th>
<th>Half of the time</th>
<th>The whole time</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>
Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you *over the past week*.

*The rating scale is as follows:*

0 Did not apply to me at all  
1 Applied to me to some degree, or some of the time  
2 Applied to me to a considerable degree, or a good part of time  
3 Applied to me very much, or most of the time

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I found myself getting upset by quite trivial things</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>I was aware of dryness of my mouth</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>I couldn't seem to experience any positive feeling</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>I experienced breathing difficulty (eg, excessively rapid</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>breathing, breathlessness in the absence of physical</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>exertion)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>I just couldn't seem to get going</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6</td>
<td>I tended to over-react to situations</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>I had a feeling of shakiness (eg, legs going to give</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>I found it difficult to relax</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>9</td>
<td>I found myself in situations that made me so</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>anxious I was most relieved when they ended</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>I felt that I had nothing to look forward to</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>11</td>
<td>I found myself getting upset rather easily</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>12</td>
<td>I felt that I was using a lot of nervous energy</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>13</td>
<td>I felt sad and depressed</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>14</td>
<td>I found myself getting impatient when I was</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>delayed in any way (eg, lifts, traffic lights,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>etc)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>I had a feeling of faintness</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>16</td>
<td>I felt that I had lost interest in just about</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>17</td>
<td>I felt I wasn't worth much as a person</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>18</td>
<td>I felt that I was rather touchy</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>19</td>
<td>I perspired noticeably (eg, hands sweaty) in the presence of</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>high temperatures or physical</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>I felt scared without any good reason</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>21</td>
<td>I felt that life wasn't worthwhile</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
MASQ-SHORT

Below is a list of feelings, sensations, problems, and experiences that people sometimes have. Read each item and then mark the appropriate choice in the space next to that item. Use the choice that best describes how much you have felt or experienced things this way during the past week, including today. Use this scale when answering:

<table>
<thead>
<tr>
<th>1 very slightly or not at all</th>
<th>2 a little</th>
<th>3 moderately</th>
<th>4 quite a bit</th>
<th>5 extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Felt sad</td>
<td>32. Was unable to relax</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Startled easily</td>
<td>33. Felt really slowed down</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Felt cheerful</td>
<td>34. Was disappointed in myself</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Felt afraid</td>
<td>35. Felt nauseous</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>5. Felt discouraged</td>
<td>36. Felt hopeless</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Hands were shaky</td>
<td>37. Felt dizzy or lightheaded</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Felt optimistic</td>
<td>38. Felt sluggish or tired</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>8. Had diarrhea</td>
<td>39. Felt really “up” or lively</td>
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<tr>
<td>9. Felt worthless</td>
<td>40. Had a pain in my chest</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Felt really happy</td>
<td>41. Felt really bored</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Felt nervous</td>
<td>42. Felt like I was choking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Felt depressed</td>
<td>43. Looked forward to things</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Was short of breath</td>
<td>44. Muscles twitched or trembled</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Felt uneasy</td>
<td>45. Felt pessimistic about the future</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Was proud of myself</td>
<td>46. Had a very dry mouth</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. Had a lump in my throat</td>
<td>47. Felt like I had a lot of interesting things</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. Felt faint</td>
<td>48. Was afraid I was going to die</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>18. Felt unattractive</td>
<td>49. Felt like had accomplished a lot</td>
<td></td>
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<td></td>
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<tr>
<td>19. Had hot or cold spells</td>
<td>50. Felt like it took an extra effort</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. Had an upset stomach</td>
<td>51. Felt like nothing was very enjoyable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. Felt like a failure</td>
<td>52. Heart was racing or pounding</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22. Felt like I was having a lot of fun</td>
<td>53. Felt like I had a lot to look forward to</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. Blamed myself for a lot of things</td>
<td>54. Felt numbness or tingling in my body</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>24. Hands were cold or sweaty</td>
<td>55. Felt tense or “high-strung”</td>
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</tr>
<tr>
<td>25. Felt withdrawn from other people</td>
<td>56. Felt hopeful about the future</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26. Felt keyed up, “on edge”</td>
<td>57. Felt like there wasn’t anything interesting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27. Felt like I had a lot of energy</td>
<td>58. Seemed to move quickly and easily</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
28. Was trembling or shaking
29. Felt inferior to others
30. Had trouble swallowing
31. Felt like crying

59. Muscles were tense or sore
60. Felt really good about myself
61. Thought about death or suicide
62. Had to urinate frequently
PANAS

This scale consists of a number of words that describe different feelings and emotions. Read each item and then list the number from the scale below next to each word. Indicate to what extent you have felt this way over the past week.

<table>
<thead>
<tr>
<th></th>
<th>1 Very Slightly or Not at All</th>
<th>2 A Little</th>
<th>3 Moderately</th>
<th>4 Quite a Bit</th>
<th>5 Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Interested</td>
<td>11.</td>
<td>Irritable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Distressed</td>
<td>12.</td>
<td>Alert</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Excited</td>
<td>13.</td>
<td>Ashamed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Strong</td>
<td>15.</td>
<td>Nervous</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Scared</td>
<td>17.</td>
<td>Attentive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Hostile</td>
<td>18.</td>
<td>Jittery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Enthusiastic</td>
<td>19.</td>
<td>Active</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**SELF COMPASSION SCALE**

**HOW I TYPICALLY ACT TOWARDS MYSELF IN DIFFICULT TIMES**

Please read each statement carefully before answering. To the left of each item, indicate how often you behave in the stated manner, using the following scale:

<table>
<thead>
<tr>
<th>Almost</th>
<th>always</th>
<th>Almost never</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

1. I’m disapproving and judgmental about my own flaws and inadequacies.  
2. When I’m feeling down I tend to obsess and fixate on everything that’s wrong.  
3. When things are going badly for me, I see the difficulties as part of life that everyone goes through.  
4. When I think about my inadequacies, it tends to make me feel more separate and cut off from the rest of the world.  
5. I try to be loving towards myself when I’m feeling emotional pain.  
6. When I fail at something important to me I become consumed by feelings of inadequacy.  
7. When I’m down and out, I remind myself that there are lots of other people in the world feeling like I am.  
8. When times are really difficult, I tend to be tough on myself.  
9. When something upsets me I try to keep my emotions in balance.  
10. When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people.  
11. I’m intolerant and impatient towards those aspects of my personality I don’t like.  
12. When I’m going through a very hard time, I give myself the caring and tenderness I need.  
13. When I’m feeling down, I tend to feel like most other people are probably happier than I am.  
14. When something painful happens I try to take a balanced view of the situation.  
15. I try to see my failings as part of the human condition.  
16. When I see aspects of myself that I don’t like, I get down on myself.
17. When I fail at something important to me I try to keep things in perspective.

18. When I’m really struggling, I tend to feel like other people must be having an easier time of it.

19. I’m kind to myself when I’m experiencing suffering.

20. When something upsets me I get carried away with my feelings.

21. I can be a bit cold-hearted towards myself when I'm experiencing suffering.

22. When I'm feeling down I try to approach my feelings with curiosity and openness.

23. I’m tolerant of my own flaws and inadequacies.

24. When something painful happens I tend to blow the incident out of proportion.

25. When I fail at something that's important to me, I tend to feel alone in my failure.

26. I try to be understanding and patient towards those aspects of my personality I don't like.
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