Affect-focused psychodynamic psychotherapy for depression and anxiety through the Internet: a randomized controlled trial

Background: Psychodynamic psychotherapy is a psychological treatment approach that has a growing empirical base. Research has indicated an association between therapist-facilitated affective experience and outcome in psychodynamic therapy. Affect-phobia therapy (APT), as outlined by McCullough et al., is a psychodynamic treatment that emphasizes a strong focus on expression and experience of affect. This model has not been evaluated for Axis-I disorders in a randomized controlled trial. While Internet-delivered psychodynamic treatments for depression and generalized anxiety disorder exist, they have not been based on APT. The aim of this randomized controlled trial was to investigate the efficacy of an Internet-based, psychodynamic, guided self-help treatment based on APT for depression and anxiety disorders.

Methods: One hundred participants with DSM-IV diagnoses of mood and anxiety disorders participated in a randomized (1:1 ratio) controlled trial of active treatment versus a control condition. The treatment group received a 10-week, psychodynamic, guided self-help treatment based on APT that was delivered through the Internet. The treatment consisted of eight text-based treatment modules and included therapist contact (9.5 minutes per client and week, on average) in a secure online environment. Participants in the control group also received online therapist support and clinical monitoring of symptoms, but received no treatment modules. Outcome measures were the 9-item Patient Health Questionnaire Depression Scale (PHQ-9) and the 7-item Generalized Anxiety Disorder Scale (GAD-7). Process measures were also included. All measures were administered weekly during the treatment period and at a 7-month follow-up.

Results: Mixed models analyses using the full intention-to-treat sample revealed significant interaction effects of group and time on all outcome measures, when comparing treatment to the control group. A large between-group effect size of Cohen's $d = 0.77$ (95% CI: $0.37 - 1.18$) was found on the PHQ-9 and a moderately large between-group effect size $d = 0.48$ (95% CI: $0.08 - 0.87$) was found on the

GAD-7. The number of patients who recovered (had no diagnoses of depression and anxiety, and had less than 10 on both the PHQ-9 and the GAD-7) were at post-treatment 52% in the treatment group and 24% in the control group. This difference was significant, $\chi2(\ N = 100,\ df = 1) = 8.3,\ p < .01$. From post-treatment to follow-up, treatment gains were maintained on the PHQ-9, and significant improvements were seen on the GAD-7.

Conslusion: This study provides initial support for the efficacy of Internet-delivered psychodynamic therapy based on the affect-phobia model in the treatment of depression and anxiety disorders. The results support the conclusion that psychodynamic treatment approaches may be transferred to the guided self-help format and delivered via the Internet.

1   AUTHOR LIST:

2   Robert Johansson[1][§], Martin Björklund[1], Christoffer Hornborg[1], Stina Karlsson[1], Hugo

3   Hesser[1], Brjánn Ljótsson[2], Andréas Rousseau[3], Ronald J. Frederick[4], Gerhard

4   Andersson[1,5,6]

6   [1]Department of Behavioural Sciences and Learning, Linköping University, Linköping,

7   Sweden

8   [2]Department of Clinical Neuroscience, Division of Psychology, Karolinska Institutet,

9   Sweden

10   [3]Psychiatric Clinic, University Hospital of Linköping, Linköping, Sweden

11   [4]Center for Courageous Living, Beverly Hills 90210, California, United States

12   [5]Department of Clinical Neuroscience, Psychiatry section, Karolinska Institutet,

13   Stockholm, Sweden

14   [6]Swedish Institute for Disability Research, Linköping University, Linköping, Sweden

16   [§]Corresponding author

18   CORRESPONDING AUTHOR:

19   Robert Johansson

20   Department of Behavioural Sciences and Learning

21   Linköping University

22   SE-58183 Linköping

23   Sweden

24   Phone: +46 (0)13 282217

25   E-mail: robert.johansson@liu.se

Introduction

Depression and anxiety disorders are major world-wide health problems, which lower

the quality of life for the individual and generate large costs for society (Ebmeier,

Donaghey, & Steele, 2006; Smit et al., 2006). Lifetime prevalence for mood disorders

and anxiety disorders have been estimated to be 20.8% and 28.8%, respectively

(Kessler et al., 2005).

Psychodynamic psychotherapy is a psychological treatment approach that has a

growing empirical base (Town et al., 2012), with research support for e.g. depression

(Driessen et al., 2010), social anxiety disorder (Leichsenring et al., 2013), panic

disorder (Milrod et al., 2007), and generalized anxiety disorder (Leichsenring et al.,

2009). There is a variation among the psychodynamic therapies in the degree to which

they focus on expression and experience of affect. Diener, Hilsenroth, and Weinberger

(2007) conducted a meta-analysis of high-quality studies that had examined the role

of therapist focus on affect in psychodynamic psychotherapy. The results indicated

that the more therapists facilitated the affective experience/expression in

psychodynamic therapy, the more patients improved (Diener et al., 2007). Thus,

keeping a focus on affect may be one way of enhancing psychodynamic

psychotherapies.

One psychodynamic treatment that has a strong focus on expression and experience of

affect is affect-phobia therapy (APT), developed by (McCullough et al., 2003). APT

follows a treatment model which adheres to the fundamental structure of

psychodynamic psychotherapy as outlined by Malan's triangle of conflict (i.e., the

experience/expression of feelings (F) is blocked by defenses (D) and anxieties (A))

1 and triangle of person (i.e., conflicted patterns began with past persons (P), are

2 maintained with current persons (C), and can be enacted with a therapist (T)), as

3 illustrated in Figure 2 (Malan, 1995). Typically in APT, the therapist clarifies a client's

4 defenses, helps the client to observe and experience the underlying affects, and helps

5 the client to regulate associated anxiety (McCullough et al., 2003). Formally, the

6 treatment includes three main treatment objectives: defense restructuring (recognizing

7 and relinquishing maladaptive defenses), affect restructuring (desensitization of

8 affects through exposure to conflicted feeling), and self/other restructuring

9 (improvement in sense of self and relationship with others). The main goal of

10 psychodynamic psychotherapy based on the APT model, is to help clients experience

11 and to adaptively express previously avoided feelings (McCullough et al., 2003). That

12 goal is shared with an entire set of psychodynamic psychotherapies that are grouped

13 under the umbrella term *experiential dynamic therapies* (Osimo & Stein, 2012),

14 which in addition to APT includes, for example, Intensive Short-Term Dynamic

15 Psychotherapy (Abbass, Town, & Driessen, 2012; Davanloo, 2000), and Accelerated

16 Experiential Dynamic Psychotherapy (Fosha, 2000). Two randomized trials,

17 investigating the efficacy of APT in the treatment of personality disorders, found that

18 APT can be effective in reducing general psychiatric symptoms (Svartberg, Stiles, &

19 Seltzer, 2004; Winston et al., 1994). However, except for case-series and some small

20 uncontrolled studies (e.g., Dornelas, Ferrand, Stepnowski, Barbagallo, &

21 McCullough, 2010), to date no trial has investigated the efficacy of APT for patients

22 with a principal Axis I disorder.

24 During the last decade, numerous trials on guided self-help and Internet-delivered

25 cognitive behavior therapy (CBT) for various psychiatric disorders have been

1   conducted (Andersson, 2009; Hedman, Ljótsson, & Lindefors, 2012; Johansson &

2   Andersson, 2012). For mild to moderate depression and anxiety disorders, it seems

3   safe to conclude that these treatments are as effective as face-to-face treatments

4   (Cuijpers, Donker, Van Straten, Li, & Andersson, 2010). While most research

5   regarding Internet-based psychological treatments have concerned CBT, there are

6   exceptions. Results from two recent randomized controlled trials focusing on the

7   treatment of depression and generalized anxiety disorder indicate that also

8   psychodynamic treatments can be delivered via the Internet (Andersson et al., 2012;

9   Johansson et al., 2012).

11   This randomized controlled trial aimed to examine the effects of an Internet-delivered

12   psychodynamic treatment, based on the affect-phobia model of psychopathology.

13   Participants had depression and anxiety disorders. The treatment was given as self-

14   help with additional therapist support via the Internet, and compared to a control

15   group who also received online support. As compared with the control condition, a

16   significant effect of treatment was expected both on measures of depression and

17   anxiety for the full sample. In addition, a larger effect was expected on measures of

18   depression for participants with depression as their main presenting problem as

19   compared with those who did not have this as the main problem. Similar, a larger

20   effect on anxiety measures was expected for participants with a principal anxiety

21   diagnosis as compared with those who did not have such a diagnosis. We also

22   investigated the uncontrolled effects of the treatment 7 months following the

23   completion of the treatment.

Materials & Methods

This study is reported in accordance with the CONSORT statement for clinical trials (Schulz, Altman, & Moher, 2010). Clinicaltrials.gov registration ID is NCT01532219. This study received approval from the Regional Ethics Board of Linköping, Sweden (Approval number: 2011/400-31). Written informed consent was obtained from all participants via the online treatment platform. Participants received the treatment at no cost. After being enrolled in the study, all participants were assigned one of the therapists as their personal contact. Half of the participants received psychodynamic treatment in the format of guided self-help and the other half was assigned to a waiting-list where participants also received support via the Internet. The waiting-list served as the control group.

Participants

Patients were recruited via the Internet and advertisements in newspapers during January 2012. The final follow-up evaluation occurred in December 2012. Patients were eligible for participation if they 1) had at least one of the following Axis-I diagnoses, specified by DSM-IV criteria: Major depressive disorder, social anxiety disorder, panic disorder, generalized anxiety disorder, depressive and/or anxiety disorder not otherwise specified; 2) had a raw score of at least 10 on either the 9-item Patient Health Questionnaire Depression Scale (PHQ-9; Kroenke, Spitzer, & Williams, 2001) or the 7-item Generalized Anxiety Disorder Scale (GAD-7; Spitzer, Kroenke, Williams, & Löwe, 2006); 3) had no assessed risk of suicidality; 4) had no concurrent psychological treatment that potentially could interfere with the treatment tested; 5) if on psychotropic medication, this treatment had to be stable for three months; 6) did not have other primary disorders that needed different treatments or

1   that could be affected negatively by the treatment; 7) had no alcohol or drug abuse; 8)

2   were at least 18 years old.

3   **Randomization and procedure**

4   After initial application, participants were invited to an online screening which

5   consisted of demographic questions and online versions of the outcome measures (see

6   below). These results were later used as a pre-treatment assessment. If initial inclusion

7   criteria were met (having more than 10 on the PHQ-9 or the GAD-7), participants

8   were contacted for a telephone-based diagnostic interview, based on the Mini-

9   International Neuropsychiatric Interview (MINI; Sheehan et al., 1998). This

10   procedure is described further below. After confirming additional inclusion criteria,

11   participants were randomized to either treatment or waiting-list (1:1 ratio; block

12   randomization), using an online randomization tool. An independent person, not

13   otherwise involved in the study, handled the randomization. The procedure is

14   illustrated in the CONSORT flowchart in Figure 1.

16   **Intervention**

17   The treatment lasted for 10 weeks and consisted of eight self-help modules given with

18   text-based therapist support. A secure online environment was used both for the

19   delivery of self-help material and for communication with the therapists. Therapist

20   support was given asynchronously, i.e. similarly to e-mail. The primary role of the

21   therapists was to give feedback on completed modules and administer gradual access

22   to the treatment. In general, feedback was given on Mondays, but the therapists were

23   available to answer additional questions within 24 hours.

1   The self-help modules were based on the book 'Living Like You Mean It' by Ronald J.

2   Frederick (Frederick, 2009) that follows a similar structure as the original affect-

3   phobia treatment manual. Throughout treatment, participants were taught how to

4   practice "emotional mindfulness" as a way of identifying, attending to, and being

5   present with emotional experience. The treatment aimed to teach clients to gradually

6   develop mindful presence as a response to the physical manifestation of emotions

7   which, within the APT model, can be considered as exposure to one's feelings.

8   Throughout the treatment modules, the affect-phobia model as illustrated by the

9   conflict triangle (Figure 2) was presented to illustrate the function of interventions and

10   to clarify patient case stories. This included techniques to identify and relinquish

11   maladaptive defenses (D), regulate anxiety (A), and approach and experience warded

12   off feelings (F). The final part of the manual contained material on how to make use

13   of experiencing one's core feelings, for example, to express these feelings in

14   interpersonal contexts. In the APT model, expressing feelings to others is seen as

15   essential to shifting both the sense of self and others (McCullough et al., 2003). All

16   modules contained homework exercises that needed to be completed before

17   proceeding to the next module. The chapter structure of the manual was: 1)

18   Introduction and problem formulation using the affect-phobia model; 2) Historical

19   understanding and explanation of the problem described; 3) Mindfulness practice to

20   start approaching emotional experience; 4) Defense restructuring; 5) Anxiety

21   regulation techniques; 6) Affect experiencing techniques; 7) Affect expression and

22   self/other restructuring; 8) A summary of the previous material and advice for

23   continued work. Further details on the treatment can be found in the original treatment

24   manual (Frederick, 2009).

1   **Control group**

2   For ethical reasons, participants on waiting-list also had continuous contact with an

3   assigned therapist during the same 10-week period. Every Monday, therapists were

4   scheduled to initiate contact with the participants, using the same secure online

5   environment as used with the treatment group. Contact involved clinical monitoring

6   of symptoms and questions typically regarding clients' experiences from the previous

7   week. Therapists were instructed to give basic support, but not to use any specific

8   psychological techniques other than empathic listening and asking further questions.

9   After the treatment period had ended, participants from the control group were offered

10   an 8-week version of the treatment. The results from that treatment period are,

11   however, outside the scope of this study.

12   **Outcome measures**

13   The main effect of treatment was assessed using two measures regarding symptoms of

14   depression and anxiety. Depression severity was assessed with the PHQ-9 (Kroenke et

15   al., 2001), a self-report measure which consists of nine items, each scored 0-3, with a

16   total score ranging from 0 to 27. The PHQ-9 has good psychometric properties,

17   including an internal consistency in the range Cronbach's α = .86 - .89 and a test-

18   retest reliability of r = .84 (Kroenke, Spitzer, Williams, & Löwe, 2010). Several

19   studies have established that the PHQ-9 is sensitive to change during treatment

20   (Kroenke et al., 2010). In addition, the PHQ-9 performs similarly regardless of the

21   mode of operation (e.g., as traditional pen and paper, or touch-screen computer; Fann

22   et al., 2009). Anxiety severity was measured by the GAD-7 (Spitzer et al., 2006), a

23   self-rated 7-item measure, also with items scored 0-3, and with a total score of 18.

24   Internal consistency is excellent (Cronbach's α = .92) and with a good test-retest

25   reliability of r = .83. Convergent validity of the GAD-7 has been shown to be good, as

1 demonstrated by its correlations with the Beck Anxiety Inventory ($r = .72$) and the

2 anxiety dimension of SCL-90 ($r = .74$) (Kroenke et al., 2010). Both measures were

3 administered pre-treatment, weekly during treatment, post-treatment and at the 7-

4 month follow-up.

5 **Process measures**

6 Two measures were included to assess two processes assumed to be relevant during

7 treatment. Both measures were administered pre-treatment, weekly during treatment,

8 post-treatment and at follow-up. The Emotional Processing Scale (EPS-25; Baker et

9 al., 2010) was used to assess emotional processing deficits and the process of

10 emotional change during treatment. In addition, the Swedish 29-item version (Lilja et

11 al., 2011) of the Five Facets of Mindfulness Questionnaire (FFMQ; Baer, Smith,

12 Hopkins, Krietemeyer, & Toney, 2006) was included to measure the influence of

13 general mindfulness skills. Psychometric properties have been found to be strong for

14 the EPS-25 (Cronbach's $\alpha = 0.92$) (Baker et al., 2010) and good for the Swedish 29-

15 item FFMQ (Cronbach's $\alpha = 0.81$) (Lilja et al., 2011). The change in total scores on

16 these measures were assumed to reflect an overall change in these processes. A

17 detailed analysis of how these processes were related to treatment outcome will be

18 reported in a separate paper.

19 **Clinician-administered measures**

20 DSM-IV diagnoses, including a participant's principal diagnosis, were recorded using

21 the MINI Interview (Sheehan et al., 1998). This instrument is completely structured,

22 making it suitable for less experienced assessors (Sheehan et al., 1998). DSM-IV

23 diagnoses recorded at pre-treatment were followed up at post-treatment and at the 7-

24 month follow-up. The interviewers were blind to treatment condition at post-

25 treatment. Another structured interview was administered at post-treatment and at

1 follow-up, which aimed to give an estimation of global improvement, measured by

2 the 7-point version of the Clinical Global Impression - Improvement (CGI-I) scale

3 (Guy, 1976). All interviews were conducted by master's level final-year clinical

4 psychologist students who were explicitly trained in the diagnostic procedure. A

5 licensed psychologist with a thorough experience from conducting diagnostic

6 interviews provided supervision throughout the assessment period and a psychiatrist

7 was available for additional consultation.

8 **Therapist training and supervision**

9 The therapists were three master's level students in their last semester of a 5-year

10 clinical psychologist program. All therapists have had clinical training in affect-

11 focused psychodynamic psychotherapy and had clinical experience from working

12 with this kind of psychotherapy. Prior to the study, all therapists were also trained in

13 providing guided self-help treatments via the Internet. Throughout the trial, clinical

14 supervision was provided by psychologist Ronald J. Frederick, who had authored the

15 original treatment manual. Treatment integrity and adherence to the treatment manual

16 were monitored during supervision.

17 **Subgroups based on depression and anxiety symptomatology**

18 To investigate differential efficacy between participants who had either depression or

19 anxiety as their main presenting problem, all participants were classified based on

20 their main symptomatology. The classification was based on the assessment of a

21 participant's principal diagnosis that was recorded in the diagnostic interview

22 conducted at baseline. These categories were used to assess whether the treatment was

23 more effective in treating depressive symptoms among participants with principal

24 depression, and analogously regarding anxiety.

1 **Statistical analyses**

2 Pre-treatment group differences in demographics and on the outcome measures were

3 tested using χ^2-tests and independent t-tests. Mixed-effects models for repeated-

4 measures data, fitted with maximum likelihood estimation, was used for all

5 continuous outcomes (Verbeke & Molenberghs, 2000). Mixed models takes into

6 account all available data from all randomized participants, making it a full intention-

7 to-treat analysis, provides unbiased estimates in the presence of missing data under a

8 fairly unrestrictive missing assumption (i.e., missing at random), and adequately

9 handles nested data structures inherent in repeated-measures data (Gueorguieva &

10 Krystal, 2004; Mallinckrodt, Clark, & David, 2001). All models included random

11 intercepts and slopes, with group, linear time and their interaction included as fixed

12 predictors. Difference in efficacy between the treatment and the control group were

13 investigated by examining the fixed interaction term of group and linear time.

14 Subgroup differences in efficacy were investigated using a fixed three-way interaction

15 term of group, subgroup and time.

17 Recovery after treatment was defined as having a score less than 10 on both the PHQ-

18 9 and the GAD-7, and not fulfilling criteria for any DSM-IV diagnosis. The same

19 definition was used at follow-up. Between-group differences in recovery at post-

20 treatment were investigated using χ^2-tests. To handle missing data from follow-up

21 diagnostic interviews and estimates of global improvement, post-treatment data were

22 carried forward to the follow-up.

24 Sample size was determined a priori based on power analyses. These power

25 calculations were based on a linear mixed-effects model (10 time points with an

26 autoregressive error structure with a random intercept and slope), an alpha set at 0.05,

1 power set at 0.80, a predicted effect size of Cohen's $d = 0.50$ and the potential for 10%

2 total attrition rate (at equal rate across time and condition). That analysis suggested

3 that 51.3 participants per group were needed to obtain the desired effect.

5 Within- and between-group effect sizes (Cohen's d) were calculated by dividing the

6 differences in means by the pooled standard deviations (Borenstein, Hedges, Higgins,

7 & Rothstein, 2009). Following Cohen's guidelines a between-group effect size in the

8 range of 0.20 - 0.49 is small, 0.50 - 0.79 is moderate, and an effect size of 0.80 and

9 above is large (Cohen, 1988).

11 **Results**

12 **Enrollment and baseline characteristics**

13 One hundred individuals with depression and/or anxiety disorders were enrolled in the

14 study. There were no significant pre-treatment differences between the treatment

15 group and the control group on any outcome measures (all t's < 0.97, all p's > .33).

16 Additionally, there were no significant differences between the groups on any

17 demographic data or current/past treatment with medication and/or psychological

18 treatment. A complete description of demographic data of included participants is

19 available in Table 1.

21   --INSERT TABLE 1--

23 Regarding subgroups of principal depression and anxiety, there was a difference

24 between subgroups in the number of participants in an acute episode of depression,

25 $\chi^2(N = 100, df = 1) = 39.4, p < .001$, with 55/57 (96.5%; two participants had

1 depression not otherwise specified) compared to 17/43 (39.5%) for subgroups of

2 depression and anxiety, respectively. Similarly, there were significantly more

3 participants with a principal anxiety disorder that had GAD (67.4%) compared to

4 35.1% from the depression subgroup, $\chi^2(N = 100, df = 1) = 10.3, p < .001$. There were

5 no differences between subgroups regarding diagnoses of panic disorder and social

6 phobia. Also, there were no differences in any demographics. However, there was a

7 significant difference between subgroups in depression severity as measured by the

8 PHQ-9 at baseline, $t(98) = 3.70, p < .001$. However, no significant baseline difference

9 on the GAD-7 was found $t(98) = 1.23, p = .22$.

10 **Attrition and adherence**

11 At post-treatment, 100% of the data was collected. At the 7-month follow-up, 47/50

12 (94%) of the self-report measures and 40/50 (80%) of the data from the follow-up

13 interviews (i.e., diagnostic data and estimates of global improvement) were collected.

14 Adherence to treatment was defined as the number of modules completed. A module

15 was only considered completed if the homework assignment had been sent to the

16 therapist. Out of the 50 participants receiving treatment, 42 (84%) completed all

17 modules. Only 4 participants (8%) completed less than half of the program.

18 **Outcome and process measures**

19 Means, standard deviations and effect sizes within and between groups for the self-

20 report measures are presented in Table 2 and Table 3. Both the treatment group and

21 the control group had substantial within-group effects after the 10-week period.

22 Mixed models analyses revealed significant interaction effects of group and time on

23 the PHQ-9, $F(1, 102.1) = 19.94, p < .001$, and the GAD-7, $F(1, 105.1) = 7.86, p < .01$.

24 Between-group effect sizes at post-treatment was large ($d = 0.77$) for depression and

25 moderate ($d = 0.48$) for anxiety, favoring treatment over control. The continuous

1 within-group changes on the PHQ-9 and the GAD-7 are illustrated in Figure 3. At the

2 7-month follow-up, the treatment effect was stable. Paired t-tests conducted post hoc

3 showed that there were significant post-treatment versus follow-up decrease on the

4 GAD-7, $t(46) = 2.03$, $p < .05$, and a trend towards a significant decrease on the PHQ-

5 9, $t(46) = 1.42$, $p = .16$. For the EPS-25 and the FFMQ, there were also significant

6 interaction effects of group and time ($F(1, 104.5) = 26.5$ and $F(1, 101.2) = 29.9$,

7 respectively; Both p's $< .001$). The between-group effect at post-treatment was large

8 for the EPS-25 ($d = 0.82$) and moderate to large ($d = 0.65$) for the FFMQ.

10   --INSERT TABLE 2--

12   --INSERT TABLE 3--

13 **Diagnoses**

14 The number of diagnoses among participants at pre-treatment, post-treatment and at

15 the 7-month follow-up are illustrated in Table 4. At post-treatment, there were

16 significantly fewer participants with a diagnosis of major depression in the treatment

17 group (10%) than in the control group (32%). The difference was significant ($\chi^2(N =$

18 100, $df = 1) = 7.3$, $p < .01$). Reductions in the number of diagnoses of GAD, SP or PD

19 were not significantly different between groups at post-treatment.

20 **Recovery after treatment and clinical global improvement**

21 Categorical rates of recovery after treatment (i.e., a participant who did not fulfill

22 criteria for any DSM-IV diagnosis and reached a score less than 10 on both the PHQ-

23 9 and the GAD-7) were significantly different at post-treatment between the treatment

24 group ($n = 26$; 52.0%) and the control group ($n = 12$; 24.0%), $\chi^2(N = 100$, $df = 1) =$

1   8.3, $p < .01$. At follow-up there were 25 participants (50.0%) from the treatment

2   group who met the criteria for recovery.

4   Post-treatment interviews resulted in estimates of clinical global improvement

5   according to the CGI-I (Guy, 1976). In the treatment group, 28 participants (56.0%)

6   were much or very much improved while this was only true for 11 (22.0%) in the

7   control group. This difference was significant, $\chi^2(N = 100, df = 1) = 12.1, p < .001$. At

8   follow-up, this figure was 52% ($n = 26$) in the treatment group.

9   **Subgroups of principal depression and anxiety**

10 Despite that the treatment had a very large within-group group effect ($d = 3.10$) on the

11 PHQ-9 in the depression subgroup, compared to for those in the anxiety subgroup (d

12 $= 1.12$), there were no significant interaction effect of group, subgroup and time on

13 the PHQ-9. The same was true for the GAD-7. Thus, there were no indications that

14 the treatment was more effective in reducing symptoms of depression among

15 participants with a principal diagnosis of depression, or analogously for anxiety

16 symptoms.

17 **Therapist time**

18 In the treatment group, the average therapist time per client and week was 9.5 minutes

19 ($SD = 4.0$). While there was a significant difference in average therapist time per

20 week between therapists ($F(2, 47) = 7.73, p < .001$), there were no correlations

21 between therapist time and change scores on any of the outcome measures (all r's < .

22 19, all p's > .18). In the control group, the average therapist time was 2.3 minutes per

23 client and week ($SD = 0.86$). The difference in therapist time between the treatment

24 group and the control group was significant, $t(98) = 12.4, p < .001$.

1 **Participants' evaluation of the treatment**

2 Most participants were satisfied (46%) or very satisfied (36%) with the overall

3 treatment they had received. Nine (18%) were indifferent or mildly dissatisfied, and

4 no one was clearly dissatisfied. An absolute majority (82%) thought that the amount

5 of text was appropriate. A similar amount of participants considered the text

6 interesting and relevant, all the time (46%) or most of the time (40%). Most

7 participants considered the treatment to be very demanding (28%), demanding (42%)

8 or somewhat demanding (26%). Importantly though, a majority considered the

9 treatment very much worth the effort (52%) or worth the effort (38%).

11 # Discussion

12 This randomized controlled trial aimed to evaluate the effects of affect-phobia therapy

13 in the format of guided self-help through the Internet in a sample of participants with

14 depression and anxiety disorders. The results indicated that the treatment was

15 effective in reducing symptoms of depression and anxiety, and also in facilitating

16 emotional processing and mindfulness skills. Subgroup analyses gave no indications

17 of differential efficacy between participants with a principal diagnosis of depression

18 and those with principal anxiety. Treatment gains were maintained in the 7-month

19 follow-up.

21 The treatment manual used in this study aimed to implement a psychodynamic

22 treatment based on the affect-phobia model in self-help format. This approach calls

23 for a discussion on similarities and differences to the original APT manual. An

24 assumption of this implementation was that the core principles of affect-phobia

25 treatment manual could be retained. This included the general model of

1   psychopathology (i.e., as illustrated by the triangle of conflict in Figure 2) and the

2   overall structure of the therapy. While the treatment emphasized how affect-phobic

3   patterns in a person's current life (C) began with past persons (P), as illustrated in

4   Malan's triangle of person, the treatment did not address how these patterns could

5   potentially be enacted with the therapist (T). Importantly, these patterns were not

6   regarded as non-existing, but rather the treatment material did not address them nor

7   was it part of the role of the therapists to address these patterns. While the therapist

8   role might overlap between guided self-help and face-to-face therapy in several

9   aspects (Paxling et al., 2013), there is a difference in the present study in how the

10 treatment material taught "emotional mindfulness" as a way of conducting exposure

11 to one's feelings without the therapist being present. Some authors have suggested that

12 exposure with response prevention may result in better effects of treatment when

13 patients conduct the exposure by themselves, in their natural environment (Röper &

14 Rachman, 1976; Salkovskis, 1985). If this is the case also in affect-phobia therapy and

15 how that would affect outcome is a question for further research, but it is possible that

16 self-exposure to feelings is at least as effective as exposure with a therapist present.

17 Summing up, despite the aforementioned differences to the original APT manual, we

18 believe that the manual used in the current study is a solid implementation of a

19 psychodynamic therapy based on the affect-phobia model.

21 In affect-phobia therapy, the model of psychopathology is the same across disorders,

22 i.e. the triangle of conflict is assumed to explain both etiology and maintenance of for

23 example depression and anxiety disorders (McCullough et al., 2003). This aim is

24 similar to transdiagnostic and unified protocols where the treatment material has been

25 arranged to fit a broader range of patients (Barlow, Allen, & Choate, 2004; Craske,

1   2012). Hence, affect-phobia therapy could be described as a transdiagnostic treatment.

2   While there are several studies on the efficacy of cognitive behavioral transdiagnostic

3   treatments for anxiety disorders (Farchione et al., 2012; McEvoy, Nathan, & Norton,

4   2009), few exist that explicitly target both depression and anxiety. However, one

5   uncontrolled trial testing the effectiveness of a group-based intervention (McEvoy &

6   Nathan, 2007) resulted in promising outcomes and showed comparable efficacy to

7   several disorder-specific treatments. More recently, Titov et al. (2011) provided

8   evidence of the efficacy of an Internet-delivered transdiagnostic program that targeted

9   both anxiety and depression, when compared to a waiting-list. Both these treatments

10 yielded within-group effect sizes of Cohen's d around 1.0 for measures of depression

11 and anxiety. Hence, the affect-phobia treatment tested in this study, seem to stand well

12 when compared to other transdiagnostic treatments tested.

14 There are methodological limitations that need to be considered. First, as we recruited

15 participants from the community and not from for example a treatment clinic, the

16 external validity of the findings are challenging to interpret. While there are studies on

17 ICBT that suggests generalizability to clinical settings (e.g., Bergström et al., 2010;

18 Hedman et al., 2013), this has yet to be proven for Internet-delivered psychodynamic

19 therapy. Moreover, more than half of the participants in the present study had three

20 years or more of university education. While this factor might have biased the results,

21 the average severity of depression and anxiety symptoms was moderate to moderately

22 severe (Kroenke et al., 2010), and more than half of the participants had comorbid

23 disorders, suggesting clinical representativity (Kessler, Merikangas, & Wang, 2007).

24 A second methodological limitation concerns the substantial within-group effects in

25 the control group, that make the results harder to interpret. These effects are probably

1 due to the weekly clinical monitoring and supportive contact with the therapists in

2 addition to the extensive test procedures such as telephone interviews before and after

3 the treatment period. While these aspects might have biased the results, it also

4 highlights the need for research regarding specific factors in guided self-help

5 treatments. A third limitation that needs to be addressed concerns the therapists in the

6 study who all of whom were psychologists in training, albeit during the last semester

7 of training in a five year program and under regular supervision. It is possible that

8 more experienced therapists would have enabled even larger treatment effects. A

9 related concern is that psychologists in training conducted all diagnostic interviews.

10 While the psychologists were explicitly trained in the diagnostic procedures and

11 received supervision, there is a possibility that level of experience may have affected

12 how the diagnostic categories were defined. Importantly though, the MINI interview

13 has been designed to be administered by non-experts.

Conclusions

16 This study provides preliminary support for the efficacy of Internet-delivered

17 psychodynamic treatment based on the affect-phobia model in the treatment of

18 depression and anxiety disorders. This study provides further evidence that

19 psychodynamic treatment approaches may be transferred to the guided self-help

20 format and delivered via the Internet. Hence, this study adds to the empirical base of

21 Internet-delivered psychological treatments and to that of psychodynamic

22 psychotherapy in general. Finally, as we have no reason to believe that the treatment

23 would perform less effectively in a face-to-face setting, the findings from this study

24 call for further research on affect-focused psychotherapies.

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9   **Figures**

10   **Figure 1 – CONSORT flowchart**

12   **Figure 2 – Malan's two triangles**

13   The two triangles (Malan, 1995) represent what David Malan called "the universal

14   principle of psychodynamic psychotherapy". That is, defenses (D) and anxieties (A)

15   can block the expression of true feelings (F). These patterns began with past persons

16   (P), are maintained with current persons (C), and are often enacted with the therapist

17   (T).

19   **Figure 3 – Weekly PHQ-9 and GAD-7 scores**

20   Weekly scores on the PHQ-9 and the GAD-7 for both groups. Vertical bars denote

21   95% confidence intervals (CI). PHQ-9: 9-item Patient Health Questionnaire

22   Depression Scale; GAD-7: 7-item Generalized Anxiety Disorder Scale.

Demographic description of the participants

Table 1

Demographic description of the participants.

		Treatment group	Control group	Total
Gender	Male	8 (16%)	10 (20%)	18 (18%)
	Female	42 (84%)	40 (80%)	82 (82%)
Age	Mean (SD)	43.1 (13.9)	46.6 (12.1)	44.9 (13.1)
	Min-Max	19 – 72	23 – 77	19 – 77
Marital status	Married or co-habiting	31 (62%)	36 (72%)	67 (67%)
	Other	19 (38%)	14 (28%)	33 (33%)
Educational level	College or university, at least 3 years	27 (54%)	29 (58%)	56 (56%)
	Other	23 (46%)	21 (42%)	44 (44%)
Employment status	Employed or student	41 (82%)	33 (66%)	74 (74%)
	Other	9 (18%)	17 (34%)	26 (26%)
Psychological treatment	No experience	15 (30%)	16 (32%)	31 (31%)
	Prior experience	35 (70%)	31 (62%)	66 (66%)
	Ongoing	0 (0%)	3 (6%)	3 (3%)
Pharmacological treatment	No experience	27 (54%)	22 (44%)	49 (49%)
	Prior experience	14 (28%)	12 (24%)	26 (26%)
	Ongoing	9 (18%)	16 (32%)	25 (25%)

Table 2_(on next page)

Means, SDs and effect sizes (Cohen's d) for measures of depression and anxiety.

Abbreviations: PHQ-9 : 9-item Patient Health Questionnaire Depression Scale ; GAD-7 : 7-item Generalized Anxiety Disorder Scale .

Table 2

Means, SDs and effect sizes (Cohen's d) for measures of depression and anxiety.

Measure and group	Mean (SD)			Effect size Cohen's d (95% CI)		
	Pre-treatment	Post-treatment	7-month follow-up	Between-group, post-treatment	Within-group pre-post-treatment	Within-group pre-7-month follow-up
PHQ-9						
Treatment group (*n* = 50)	13.90 (3.6)	6.32 (4.2)	5.55 (3.5)	0.77 (0.37 – 1.18)	1.93 (1.31 – 2.55)	2.43 (1.72 – 3.14)
Depression subgroup (*n* = 28)	15.32 (3.3)	5.89 (2.8)	5.96 (3.5)	0.95 (0.40 – 1.50)	3.10 (1.87 – 4.32)	2.82 (1.78 – 3.87)
Anxiety subgroup (*n* = 22)	12.09 (3.3)	6.86 (5.5)	5.00 (3.4)	0.55 (-0.06 – 1.16)	1.12 (0.49 – 1.75)	2.17 (1.11 – 3.24)
Control group (*n* = 50)	13.96 (4.7)	10.26 (5.9)			0.69 (0.40 – 0.97)	
Depression subgroup (*n* = 29)	15.17 (4.4)	10.59 (6.4)			0.79 (0.37 – 1.22)	
Anxiety subgroup (*n* = 21)	12.43 (4.7)	9.81 (5.2)			0.53 (0.20 – 0.85)	
GAD-7						
Treatment group (*n* = 50)	11.46 (4.0)	6.12 (4.5)	5.34 (4.1)	0.48 (0.08 – 0.87)	1.25 (0.79 – 1.71)	1.51 (0.97 – 2.06)
Depression subgroup (*n* = 28)	10.86 (4.1)	5.46 (3.9)	5.19 (4.1)	0.56 (0.03 – 1.09)	1.35 (0.75 – 1.95)	1.43 (0.73 – 2.10)
Anxiety subgroup (*n* = 22)	12.23 (3.8)	6.95 (5.3)	5.55 (4.2)	0.39 (-0.21 – 0.99)	1.15 (0.44 – 1.86)	1.62 (0.72 – 2.52)
Control group (*n* = 50)	12.26 (4.2)	8.40 (5.0)			0.82 (0.51 – 1.13)	
Depression subgroup (*n* = 29)	11.97 (5.0)	8.03 (5.3)			0.76 (0.39 – 1.13)	
Anxiety subgroup (*n* = 21)	12.67 (2.8)	8.90 (4.7)			0.93 (0.36 – 1.50)	

Abbreviations: PHQ-9: 9-item Patient Health Questionnaire Depression Scale; GAD-7: 7-item Generalized Anxiety Disorder Scale.

Means, SDs and effect sizes (Cohen's d) for measures of emotional processing and mindfulness skills.

Abbreviations: EPS-25: Emotional Processing Scale; FFMQ: Five Facets of Mindfulness Questionnaire.

Table 3

Means, SDs and effect sizes (Cohen's d) for measures of emotional processing and mindfulness skills.

Measure and group	Mean (SD)			Effect size Cohen's d (95% CI)		
	Pre-treatment	Post-treatment	7-month follow-up	Between-group, post-treatment	Within-group pre-post-treatment	Within-group pre-7-month follow-up
EPS-25						
Treatment group (*n* = 50)	5.00 (1.03)	2.86 (1.48)	2.84 (1.65)	0.82 (0.41 – 1.23)	1.67 (1.13 – 2.21)	1.51 (1.00 – 2.01)
Control group (*n* = 50)	4.93 (1.01)	4.17 (1.73)			0.50 (0.22 – 0.77)	
FFMQ						
Treatment group (*n* = 50)	76.70 (10.9)	88.00 (12.0)	88.98 (13.3)	0.65 (0.25 – 1.05)	0.98 (0.65 – 1.31)	0.99 (0.59 – 1.39)
Control group (*n* = 50)	77.18 (14.1)	78.44 (17.1)			0.08 (-0.11 – 0.27)	

Abbreviations: EPS-25: Emotional Processing Scale; FFMQ: Five Facets of Mindfulness Questionnaire.

Frequency data of DSM-IV diagnoses.

Note: The four participants with zero diagnoses listed at pre-treatment fulfilled DSM-IV criteria for depression and anxiety, not otherwise specified. *Abbreviations:* DEP, GAD, SP, PD: Diagnoses of major depression, generalized anxiety disorder, social phobia and panic disorder.

Table 4

Frequency data of DSM-IV diagnoses.

	Treatment group			Control group	
Diagnosis	Pre-treatment	Post-treatment	7-month follow-up	Pre-treatment	Post-treatment
DEP	35 (70%)	5 (10%)	6 (12%)	37 (74%)	16 (32%)
GAD	23 (46%)	13 (26%)	10 (20%)	26 (52%)	18 (36%)
SP	19 (38%)	10 (20%)	9 (18%)	17 (34%)	13 (26%)
PD	11 (22%)	5 (10%)	6 (12%)	9 (18%)	5 (10%)
Number of diagnoses					
0	4 (8%)	23 (56%)	31 (62%)	0 (0%)	18 (36%)
1	16 (32%)	13 (26%)	8 (16%)	23 (46%)	18 (36%)
2	19 (38%)	7 (14%)	10 (20%)	16 (32%)	9 (18%)
3	10 (20%)	2 (4%)	1 (2%)	10 (20%)	4 (8%)
4	1 (2%)	0 (0%)	0 (0%)	1 (2%)	1 (2%)
Total number of diagnoses	88	33	31	89	49

Note: The four participants with zero diagnoses listed at pre-treatment fulfilled DSM-IV criteria for depression and anxiety, not otherwise specified.

Abbreviations: DEP, GAD, SP, PD: Diagnoses of major depression, generalized anxiety disorder, social phobia and panic disorder.

Figure 1

CONSORT flowchart
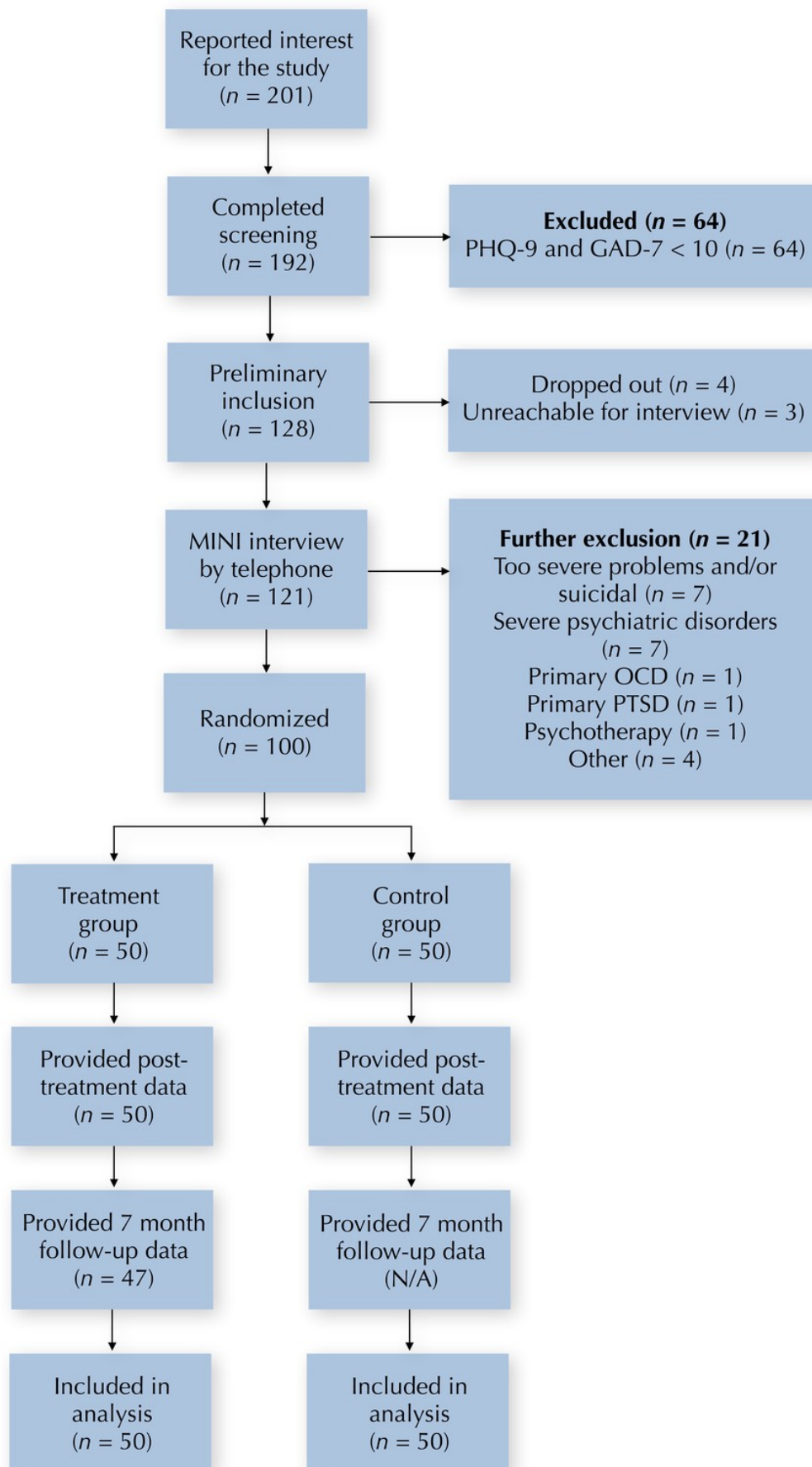
Figure 2

Malan's two triangles - the triangle of conflict and the triangle of person.

The two triangles (Malan, 1995) represent what David Malan called "the universal principle of psychodynamic psychotherapy". That is, defenses (D) and anxieties (A) can block the expression of true feelings (F). These patterns began with past persons (P), are maintained with current persons (C), and are often enacted with the therapist (T).
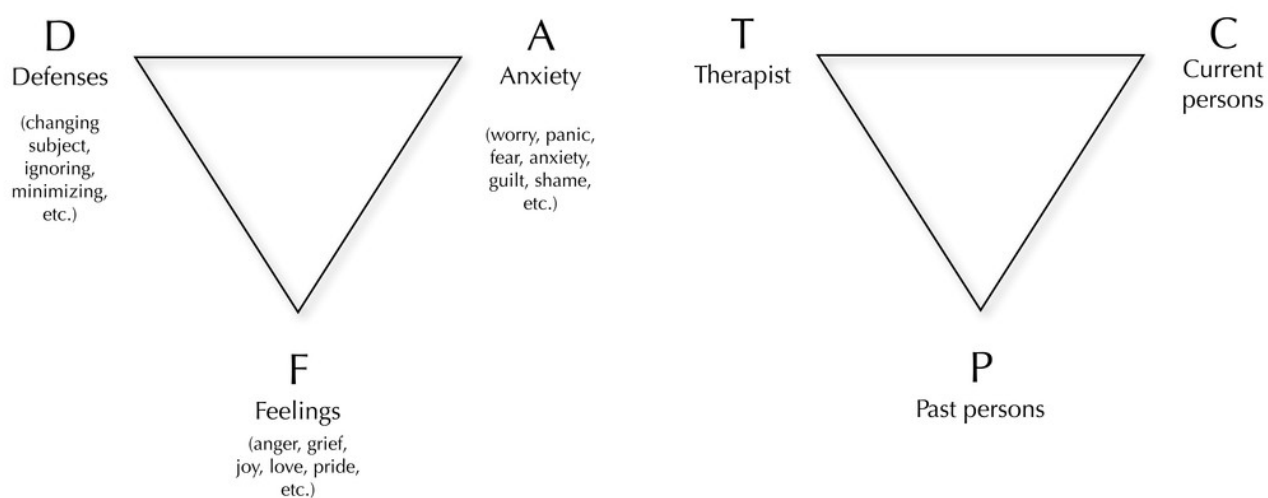
Figure 3

Weekly PHQ-9 and GAD-7 scores

Weekly scores on the PHQ-9 and the GAD-7 for both groups. Vertical bars denote 95% confidence intervals (CI). PHQ-9: 9-item Patient Health Questionnaire Depression Scale; GAD-7: 7-item Generalized Anxiety Disorder Scale.