

Explicit and implicit attachment and the outcomes of acceptance and commitment therapy and cognitive behavioral therapy for depression

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Abstract

Background Attachment theory predicts that patients who are not securely attached may benefit less from psychological treatment. However, evidence on the predictive role of attachment in the effectiveness of treatment for depression is limited. Methods Explicit attachment styles, levels of attachment anxiety and attachment avoidance, as well as implicit relational self-esteem and implicit relational anxiety were assessed in 67 patients with major depressive disorder (MDD) receiving Acceptance and Commitment Therapy (ACT) or Cognitive Behavioral Therapy (CBT). ANOVA and hierarchical regression analyses were performed to investigate the predictive power of explicit and implicit attachment measures on treatment outcome. Results Explicit attachment avoidance at pre-treatment significantly predicted reduction of depressive symptoms following treatment. Reductions in attachment anxiety and avoidance from pre- to post-treatment predicted better treatment outcomes. Neither attachment style as a categorical variable nor any of the implicit measures significantly predicted treatment outcome. Limitations The sample size is likely to limit the power to detect small effects. Conclusions Our findings suggest that patients with all four attachment styles may profit similarly from psychological interventions. Attachment avoidance as a dimension was shown to play a role in treatment of depression, as were reductions in avoidant and anxious attachment dimensions. Future research should therefore investigate under what circumstances attachment avoidance can lead to better treatment results and if these effects remain in the long term.

Background

Despite a large body of research into the treatment of depression (1), little is known about what patient characteristics can predict response to psychological treatments (2). Differences in individuals' interpersonal characteristics may be important in understanding patients' differential responses to psychological treatment. Attachment theory claims that negative childhood experiences such as growing up with insensible caregivers can lead to mental representations of self as unworthy and of important others as emotionally unavailable. Such representations tend to get in the way of satisfactory interpersonal relationships (3). Research shows that both adults and adolescents with anxious and avoidant attachment report higher levels of depression than those with secure attachment (4). Furthermore, empirical data suggest that the patients' attachment orientation may be an important predictor of treatment outcome. For instance, attachment orientation has been researched as a predictor of the course of symptoms of MDD following hospital discharge (5). Jones and colleagues (5) found that the combination of high attachment avoidance with low attachment anxiety predicted a lower chance of having MDD four months after discharge. Other studies suggest that attachment avoidance, alone or in combination with high attachment anxiety, impacts depression outcome negatively, yet the findings are not entirely consistent (4). Attachment orientation might further influence the role of the therapeutic alliance as an active treatment ingredient (6, 7). As such, interpersonal difficulties are likely to be associated with emotion regulation difficulties and thus have an impact on treatment outcome.

Brennan and colleagues (8) conceive individual differences in attachment in terms of anxiety and avoidance as underlying dimensions of emotional and behavioral regulation. Attachment-related anxiety

refers to the fear of being abandoned and a desire to be close to partners (9), while attachment-related avoidance relates to down-regulation of emotions by withdrawing from close relationships (10). Bartholomew and Horowitz (11) have developed a model with four prototypical attachment styles of adults. According to their model, low avoidance fits with a positive image of others and high avoidance with a negative image of others. Low anxiety fits a positive self-image of the individual and high anxiety fits a negative self-image of the individual. Combining these dimensions leads to the four attachment styles: secure attachment, which indicates low levels of anxiety and avoidance. A preoccupied attachment style points to a sense of self-unworthiness and a positive image of others. Fearful attachment indicates a negative image of both self and others. Finally, dismissive attachment implies a positive self-image and a negative image of others.

Attachment is often measured with self-report measures, like the Experiences in Close Relationships (ECR) (8). Evidence from self-report studies supports the theoretical assumptions about attachment security and attachment anxiety. However, findings are less coherent on the relationship between attachment and psychotherapy outcome (4). This is perhaps related to the use of self-report measures, which may have several drawbacks (12). Automatic processes are assumed to play a crucial role in attachment behavior (10), and research on the relationship between attachment and psychotherapy outcome may profit from the inclusion of implicit assessment of attachment. Implicit measures, such as the Implicit Association Test (IAT) (13) are used to map automatic processes that are more difficult to measure with explicit measurements because they are unconscious or because they are influenced by social evaluations (14). Implicit measures are known to be capable to predict behavior (15, 16). The IAT in particular has been shown to predict spontaneous behavior (12). Dewitte and colleagues (17) used the IAT to assess the relationship of relational self-esteem and relational anxiety with attachment style. The authors concluded that there was a significant relationship between the degree of implicit relational self-esteem and implicit relational anxiety, as measured by the IAT, and individual differences in attachment style.

An IAT consists of several blocks in which participants are instructed to categorize words as quickly as possible into different categories by pressing two separate response-buttons. Participants discriminate target items consisting of certain concepts and their opposites, for instance 'me' and 'not-me'. In addition, they sort attribute-items into two categories, like relationally worthy and relationally worthless. Attributes and targets are combined in several ways. The hypothesis is that association strengths between attribute-items, target items and categories influence performance. The IAT uses complementary pairs of concepts and attributes, which limits its use to measuring the relative strengths of pairs of associations rather than absolute strengths of single associations. In the context of measuring self-concepts the choice of a complement is not always obvious. For instance, 'not me' or 'other' is far less specific than 'I' or 'me'. Karpinski and Steinman (18) designed the SC-IAT as a modification of the IAT procedure to measure the evaluative associations with a single category or attitude object. This resolves the problems of the IAT mentioned above, while keeping the advantages, as the SC-IAT shares many properties with the IAT.

The aim of the current study was to examine the relationship between attachment and the outcome of psychological treatment for depression, measured both implicitly (SC-IAT) and explicitly (questionnaires). Based on previous research by Conradi and colleagues (19), we expected that a secure attachment style will be associated with better treatment outcome, whereas avoidant, anxious and preoccupied attachment styles will be associated with poorer treatment outcome. Furthermore, we expected that higher scores on the dimensions of relational anxiety and avoidance would correlate with poorer treatment outcomes. We expected that relational anxiety and avoidance scores would decrease from pre-treatment to post-treatment and that this change would predict treatment outcome. Based on the work of Dewitte and colleagues (17), we expected that higher pre-treatment implicit relational self-esteem scores and lower pre-treatment implicit relational anxiety scores will be associated with better treatment outcomes.

Methods

Participants

Eligible participants were patients referred to a clinic in the Netherlands for specialized out-patient care by their general practitioner or other mental health practitioners. Patients were between 18 and 65 years and were diagnosed with MDD as the principal diagnosis, as assessed with the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID) (20). Comorbidity as such was not a reason for exclusion, except for the following disorders: bipolar, psychotic, substance dependence, borderline or anti-social personality and organic brain syndrome. Antidepressant medication was required to be on a stable dose for at least two weeks. We assessed 601 subjects for eligibility, of whom 99 were randomized and 82 received treatment within our study. At post-treatment, 67 subjects filled in all measures. A detailed description of the method, treatment and the results on outcome can be found elsewhere (21).

Measurements

Outcome measures

The Quick Inventory of Depressive Symptomatology (QIDS) (22) was applied as a self-report assessment of depressive symptoms. The 16-items of the QIDS assess symptoms of depression including sleep disturbance, psychomotor activity and changes in appetite or weight, with several items per domain. The QIDS total score ranges from 0 to 27. A score of 0–5 is considered to be within the normal range. We assessed the QIDS at pre- and post-treatment. Cronbach's α were .68 pre-treatment and .85 post-treatment.

The European Health Interview Surveys Quality of Life Scale (EUROHIS) (23) was used to measure quality of life. It consists of 8 items (overall quality of life, general health, energy, daily life activities, esteem, relationships, finances, and home). Total scores can range from 8–40, with higher scores indicating

higher quality of life. The EUROHIS showed acceptable cross-cultural performance and a satisfactory discriminant validity (24). We assessed the EUROHIS at pre- and post-treatment. Cronbach's α s were .73 pre-treatment and .83 post-treatment.

Potential predictors of treatment outcome

To measure explicit attachment aspects, we used the Dutch version (25) of the Experience in Close Relationships (8). We used the two subscales, which measure the dimensions attachment anxiety and attachment avoidance. The questionnaire consists of 36 items. The Dutch version was found to be valid and reliable in a general sample of the Dutch population (25), with Cronbach's $\alpha = .88$ for the avoidance subscale and Cronbach's $\alpha = .86$ for the anxiety subscale. We assessed the ECR at pre- and post-treatment. In our study, Cronbach's α s were .90 and .88 for attachment anxiety pre- and post-treatment and .91 and .93 for attachment avoidance pre- and post-treatment.

Using the pre-treatment sum scores on the two subscales we divided participants into four different attachment styles, based on the work of Conradi (26). These attachment styles refer to the work of Bartholomew and Horowitz (11). See table 1 for the algorithm we used to form the four groups.

To measure implicit aspects of attachment, we used SC-IATs (18). The two types of SC-IATs used in this study related to relational self-esteem and relational anxiety were based on Dewitte et al. (17). Prior to each SC-IAT, participants were instructed to imagine that an important attachment figure would go away for a longer period of time. The aim of this priming assignment was to activate the participant's attachment system (17). Each SC-IAT consisted of two critical test blocks that were preceded by a practice block. In each upper corner of the screen there were two fixed attribute categories for each SC-IAT, either 'loved' and 'unwanted' or 'calm' and 'anxious'. In the two trial blocks a target label was placed under one of the attribute categories. The target label was 'me' for both SC-IATs. Both the sequence of the SC-IATs and the place where the target label first appeared were counterbalanced, to counter sequence effects (27). Participants had to place words that appeared on the screen as quickly as possible under the right attribute category with any target label. The premise was that the sorting becomes easier (i.e., relatively shorter reaction times) when a target and attribute that share the same response key are strongly associated than when they are weakly associated. To determine which association was stronger, the average reaction times of block 2 and block 3 were compared per SC-IAT. A faster average reaction time was, as with the IAT, interpreted as a stronger association in the memory between the attribute category and the target label in question (28). The reliability of the SC-IAT is comparable to the usual reliability of IAT measurements (18). We assessed the SC-IATs before treatment.

Treatment

Participants were randomly assigned to either Cognitive Behavioral Therapy ($n = 38$) or Acceptance and Commitment Therapy ($n = 44$). Treatment in both conditions consisted of a minimum of 8 and a

maximum of 20 sessions over 30 weeks. Sessions generally lasted 45–55 minutes. CBT was provided based on a manual that is consistent with standard CBT for depression (29) and included both behavioral and cognitive aspects in an integrated fashion (30). ACT was provided through the treatment manual for depression developed for this study by A-Tjak (31), based on Hayes, Strosahl, and Wilson (32), Zettle (33), and Robinson and Strosahl (34). The manual consists of 16 sessions addressing acceptance, defusion, an observing perspective and present moment awareness in the first eight sessions. The subsequent part of the treatment addressed behavioral change through values clarification and shaping committed action.

Procedure

The data used in the present study are part of a randomized controlled effectiveness trial comparing CBT and ACT (21). In short, we found that at post-treatment, remission rates from depression were 75% and 80 % for the ACT and CBT condition, respectively. Patients in both conditions further reported significant and large reductions of depressive symptoms and improvement on quality of life from pre- to post-treatment as well as at 6-month follow-up. Our findings indicated no significant differences between the two intervention groups at post-treatment and at 6-month follow-up. For the present study, we combined the data of patients of both intervention groups. Data were collected at pre-treatment and following treatment at the treatment site. Participants first answered questions about demographics and filled in questionnaires. After filling in questionnaires at the computer, they completed the SC-IAT.

Statistical analyses

Participants were divided into four groups (group 1: secure; group 2: avoidant, group 3: anxious, group 4: preoccupied) based on their scores on the subscales of the ECR (26). The data were screened for outliers and normality. All variables were found to be normally distributed. Incomplete data sets were not used. ANOVAs and regression analyses were performed with SPSS version 20. Datasets of dropouts, when post-treatment data were available ($n = 11$), were used.

Data reduction SCI-ATs

Processing of the SC-IAT data took place on the basis of improved scoring algorithm (35). Incorrectly answered trials were repeated. Responses to the second trial were removed. In accordance with the scoring algorithm, all trials with latencies in reaction time over 10 seconds were removed. When participants had a reaction time shorter than 300 ms on more than 10% of the trials, all trials of these participants were also removed. The average reaction time per participant was calculated for block 2 and block 3. The trials in which the participant gave the wrong answer were replaced by the block average plus twice the standard deviation of the block in question. Subsequently, the new block means were calculated with the corrected data and associated standard deviations. Finally, the bias score per SC-IAT

was calculated by dividing the block average of block 3 minus the block average of block 2 by the standard deviation. As such, a positive bias score indicates, per SC-IAT, a positive self-esteem, and a high relational anxiety, respectively.

Results

Table 2 shows means and standard deviations of all measured variables. We calculated correlations between the implicit attachment measures and the two subscales of the ECR and found no significant correlation (see Table 3).

The relationship between attachment style and treatment outcome

A 2 (time; pre-treatment, post-treatment) by 4 (attachment style; secure, avoiding, anxious and preoccupied) mixed model ANOVA was performed to examine the relationship between the four attachment styles, based on the pre-treatment assessment of the ECR, and the effect of time regarding depression and quality of life scores from pre- to post-treatment.

On the QIDS, there was a statistically significant effect of time, $F(1, 63) = 65.49, p < .001, \eta_p^2 = .51$, but no significant interaction effect, $F(3, 63) = 1.92, p = .14, \eta_p^2 = .08$. On the EUROHIS, there also was a statistically significant effect of time, $F(1, 63) = 33.71, p < .001, \eta_p^2 = .35$, but no significant interaction effect, $F(3, 63) = .93, p = .43, \eta_p^2 = .04$. No post-hoc comparisons were made. Our results indicate that attachment style was not significantly related to the reduction of depressive symptoms and increase in quality of life during treatment.

The predictive value of the attachment anxiety and avoidance dimensions on the outcome measures

A series of hierarchical multiple regression analyses were conducted with the QIDS and EUROHIS as the outcome measure and the ECR anxiety and avoidance subscales as predictors. To control for initial levels of depressive symptoms and quality of life, the pre-treatment scores of the outcome measure (i.e., QIDS or EUROHIS) were entered in step 1, and the predictor variables were entered in step 2. Table 4 shows the results of the regression analyses. The only significant finding was the prediction of the ECR-avoidance dimension on the post-treatment QIDS scores ($p = .001$), over and above the pre-treatment QIDS scores, with $\Delta R^2 = .15, p = .001$. This means that higher avoidance scores on the ECR were associated with more symptom reduction, but not an increase in quality of life.

The predictive value of the implicit attachment measures on the outcome measures

A series of hierarchical multiple regression analyses were conducted to examine the degree to which the SC-IAT attachment measures predicted treatment outcome as assessed with the QIDS and EUROHIS. Here too, pre-treatment scores of the QIDS and EUROHIS were entered in step 1 to control for initial levels of depressive symptoms and quality of life (see Table 5). None of the implicit attachment scores provided significant explanatory power to the post-treatment scores on the QIDS and EUROHIS.

The predictive value of changes in the attachment dimensions on the outcome measures

A series of hierarchical multiple regression analyses were conducted with the QIDS and EUROHIS as the outcome measure and the change in scores in the ECR anxiety and avoidance subscales from pre- to post-treatment as predictors. As can be seen in Table 6, pre-treatment scores of the outcome measure were entered in step 1 to control for initial levels of depressive symptoms and quality of life, and the predictor variables were entered in step 2. A decrease in attachment anxiety and avoidance during treatment significantly predicted lower depression scores, $\Delta R^2 = .12$, $p = .002$ for attachment anxiety, and $\Delta R^2 = .18$, $p < .001$ for attachment avoidance. Similarly, a decrease in attachment anxiety and avoidance during treatment predicted higher quality of life post-treatment, $\Delta R^2 = .12$, $p = .001$ for attachment anxiety, and $\Delta R^2 = .19$, $p < .001$ for attachment avoidance.

[Table 4, 5 and 6 here]

Discussion

Our results revealed no relationship between attachment style and treatment outcome. Patients from all four attachment styles profited significantly from the CBT or ACT treatment without significant differences between them. Our expectations regarding the relationship between pre-treatment attachment dimensions and treatment outcome were not met. Surprisingly, however, higher attachment avoidance, as measured with the ECR, predicted more symptom reduction. Changes in attachment anxiety and avoidance from pre- to post-treatment predicted better treatment outcomes. Lastly, we found no significant predictive relationship between implicit attachment measures and treatment outcome.

We found no differences between attachment styles and treatment outcome, one of them being avoidant. The finding that attachment avoidance as a dimensional variable predicted post treatment depression scores, whereas the avoidant attachment style was not associated with treatment outcome is somewhat surprising, in particular as both were measured with the ECR. This contradiction might be explained by the fact that our sample size might have been too small to be subdivided into four attachment style groups. Furthermore, only few studies have used the algorithm suggested by Conradi (26), while much

more studies have investigated the two attachment dimensions as an important factor regarding interpersonal relationships and potential gains from psychological treatment (36). Our findings might indicate that avoidance is better measured as a dimension rather than as a category one does or does not belong to.

Surprisingly, higher scores of attachment avoidance at pre-treatment were related to better depression outcomes. Hardy and Barkham (7) found that attachment avoidance correlated with difficulties with work colleagues, with relationships at home and in social life. Furthermore, the quality of a couple relationship is linked to outcome after psychological treatment for depression (3). Partners may provide important support. Guidelines for treatment for depression advise couples therapy when there are significant problems in the relationship (37). This accords with our findings on the relationship between changes in attachment dimensions during treatment, but is in contrast with our finding that higher attachment avoidance at the onset of treatment is associated with less depression post-treatment. Some studies produced similar results as our study. For instance, Woods and colleagues (38) found in a sample of women dissatisfied with their romantic relationship that more avoidant women experienced significantly better treatment outcomes. An explanation could be that avoidance prevented engagement in negative interactions with their partner, keeping dissatisfaction low. In the study by Woods and colleagues (38) attachment anxiety did not turn out to be a predictor of change in depression. McBride and colleagues (39) also found that attachment anxiety was not related to treatment outcome. However, high attachment avoidance was associated with greater reductions in depressive symptoms following CBT as compared to Interpersonal Therapy (IPT). The authors suggested that this finding might be explained by the explicit emphasis on improving individuals' relationships and interpersonal interactions in IPT rather than CBT. Working on the relationship could be too threatening for people who regulate their emotions by avoiding closeness. Ravitz and colleagues (40) suggest from previous research that attachment avoidance may interfere with treatment response in IPT, because it addresses interpersonal functioning. However, the evidence also seems to suggest that attachment orientation can be modified through therapy (40). In line with this, we found that after treatment patients showed a reduction in both attachment avoidance and anxiety, although our treatments were not explicitly interpersonal. However, in the CBT condition, there was a focus on assertiveness skills and in the ACT condition, interpersonal values could be addressed. Perhaps this more indirect way of working on interpersonal problems led to less resistance than focusing more directly on relationships. Bernecker and colleagues (41) aimed to replicate and extend the findings from McBride and colleagues (39). Contrary to our findings and those of others, they did not find that anxious or avoidant attachment moderated treatment outcome, but found that across treatment conditions, anxious attachment predicted more positive outcomes, while avoidant attachment predicted more negative outcomes.

Time may be another important factor to understand the differences in outcome regarding attachment avoidance. Perhaps in the short term, treatments that do not directly focus on interpersonal effectiveness lead to better depression outcome. In the long term, helping people to connect and improve relationships may be more challenging, but also improving quality of life and perhaps protect from relapse into depression. According to Zilcha-Mano and colleagues (36), this could be done by encouraging feelings of

intimacy in the patient-therapist relationship, which is not customary in CBT. Future research should focus on comparing therapies for depression, that do not focus explicitly on interpersonal relationships with therapies that do, related to attachment avoidance and relationship satisfaction in the long run.

Attachment anxiety assessed at pre-treatment was not a significant predictor of either depressive symptoms or quality of life at post-treatment. One reason for this finding could be that people who are anxiously attached, seek support from people they feel close to. Depressive symptoms may not be related to interpersonal problems for those who are anxiously attached and in a secure relationship. Attachment anxiety may be more pronounced when the relationship is threatened or absent. However, we were not able to assess to what extent this applied to our sample, as we had not measured the quality of the relationship. Then again, our sample size might not have been powered enough to find potential associations between attachment and depression or quality of life. Accordingly, research with larger samples is needed to further investigate this relationship.

To the best of our knowledge, our study is the first to use a SC-IAT to measure relationship self-esteem and relational anxiety. We found no relationship between treatment outcome and both implicit measures. Neither did we find a significant correlation between the implicit measures and the ECR subscales. This is in line with the findings of Venta et al. (42), who found no relationship between attachment IATs and romantic partner attachment, as measured with the ECR revised. The authors report their finding is representative, to some degree, to all other attachment IAT studies. However, we did not directly compare explicit and implicit measures. Furthermore, it remains unclear whether an explicit focus during treatment on implicit cognitions might have led to change in implicit cognitions, which could have influenced treatment outcome. According to Beevers (43) effortful explicit processing could override implicit negative responses. There is some evidence suggesting that an individual's awareness of implicit responses can increase the efficacy of CBT (44).

Dewitte and colleagues (17) found levels of implicit relational self-esteem and implicit relational anxiety as measured by the IAT to be related to the attachment dimensions. However, their study was not conducted with a clinical sample. Furthermore, they used the revised version of the ECR, whereas we used the original ECR (8). In addition, we did not specify in our study on what attachment figure patients had to focus on before taking the SC-IAT assessment. Research by Fraley and colleagues (45) suggests that the context of the attachment figure is relevant. Perhaps specifying the attachment figure, as was done by Dewitte and colleagues (17), would have primed implicit attachment aspects better. Moreover, the SC-IATs as applied in our study may lack construct validity, in relation to psychopathology in general and depression specifically. Another possibility is that there is no relationship between implicit attachment as measured with the SC-IAT or IAT and treatment outcome. In addition, the use of single categories may not be a valid measure and the IAT may be a better measure of implicit attachment. Future research should compare the IAT and SC-IAT directly, make sure participants are adequately primed and construct SC-IATs with content based on explicit measures.

A considerable strength of our study into potential implicit predictors of outcome in depression treatment is that we used a clinical sample. Many studies on implicit measures have been conducted with academic samples, which may lack generalizability to clinical populations (44). Furthermore, we applied both explicit and implicit measures. However, our study has also some limitations. The lack of results regarding the impact of attachment style and attachment anxiety may be due to the insufficient power of our study. The relative low number of participants per treatment model (CBT and ACT) prohibited a comparison of the predictors per treatment condition. Yet, treatment conditions did not significantly differ in treatment outcome (21). Additionally, no manipulation checks were performed to control whether instructions to imagine that an important attachment figure would go away for a longer period of time were successful. Nor did we specify what kind of relationship there had to be with the attachment figure. Furthermore, we did not assess whether participants had been romantically involved.

Conclusion

To conclude, our study suggests that attachment orientation may be a promising predictor of treatment outcome for depression. Future research with larger samples and multiple data points is needed to better understand how attachment may serve as moderator and mediator of treatment outcome.

Abbreviations

ACT: Acceptance and Commitment Therapy; CBT: Cognitive Behavioral Therapy; ECR: Experiences in Close Relationships; EUROHIS: European Health Interview Surveys Quality of Life Scale; IAT: Implicit Association Test; IPT: Interpersonal Therapy, MDD: Major Depressive Disorder; QIDS: Quick Inventory of Depressive Symptomatology; QIDS-SR: Quick Inventory of Depressive Symptomatology Self-Report; SC-IAT: Single Category Implicit Association Test(s); SCID I: Structured Clinical Interview for DSM-IV Axis I Disorders.

Declarations

Ethics approval and consent to participate: The study was approved by the Institutional Review Board of the University of Amsterdam and registered on Clinical Trials Register (clinicaltrials.gov; NCT01517503). All participants provided written informed consent.

Consent for publication: Not applicable

Availability of data and material: The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Competing interests: The authors declare that they have no competing interests.

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first author was employed by PsyQ as a clinician during the execution of the study, and was allowed to spend time on the research.

Authors' contributions: JA is the principle investigator and has been involved in all aspects of study conception, design and performed all statistical analyses. NM, WB and PE are co-investigators and have contributed to study design. NM and PE have provided expertise and supervision on CBT. JA has developed the ACT protocol, provided expertise and supervision on ACT. WB has created the SC-IATs, with assistance of NM. MT has provided statistical expertise. All authors have edited and critically reviewed the paper for intellectual content and approved the final version.

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Tables

Table 1 Classification of attachment styles based on the ECR

Attachment styles	Sum score subscale Anxiety	Sum score subscale Avoidance
Secure	<63	<50
Avoiding	<63	≥ 50
Anxious	≥ 63	≥ 50
Preoccupied	≥ 63	<50

Note: ECR = Experiences in Close Relationships Questionnaire.

Table 2 Means and standard deviations of depression, quality of life, explicit and implicit attachment.

Measure	Mean Pre-treatment	Standard deviation pre-treatment	Mean Post-treatment	Standard deviation post-treatment
QIDS	18.00	6.25	8.85	7.68
EURHIS	20.45	4.66	25.64	5.53
ECR-anxiety	69.60	19.72	63.55	16.47
ECR-avoidance	58.88	18.75	54.16	17.67
SC-IAT-RSE	-.24	.35		
SC-IAT-RA	.19	.35		

Note: QIDS = Quick Inventory for Depressive Symptomatology, EUROHIS = European Health Interview Surveys Quality of Life Scale, ECR = Experiences in Close Relationships Questionnaire, SC-IAT = Single Category Implicit Association Test, RSE = relational self-esteem, RA = relational anxiety.

Table 3 Correlations (N) between all measures

Due to technical limitations, Table 3 is only available as a download in the supplemental files section.

Table 4 Hierarchical regression analysis: attachment dimensions predicting symptom levels of depression and quality of life

Due to technical limitations, Table 4 is only available as a download in the supplemental files section.

Table 5 Hierarchical regression analysis: implicit attachment predicting symptom levels of depression and quality of life

Due to technical limitations, Table 5 is only available as a download in the supplemental files section.

Table 6 Hierarchical regression analysis: changes in attachment dimensions predicting levels of depression and quality of life

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