Acceptance and commitment therapy for social anxiety disorder and Agoraphobia: A preliminary investigation

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Abstract
Anxiety is one of the most prevalent psychiatric symptoms. It is also the common cause of most anxiety disorders, including social anxiety disorder and agoraphobia. Despite the proven efficacy of cognitive-behavioral approaches, many patients do not respond to treatment or do not complete it successfully. This preliminary study was aimed to evaluate the feasibility and effectiveness of acceptance and commitment therapy (ACT) on a sample of Iranians with social anxiety disorder (SAD) and agoraphobia (AP). Sixteen patients diagnosed with SAD and AP were randomly placed in the ACT and control conditions and participated in an individual 12-session program of acceptance and commitment therapy. Social phobia and anxiety inventory (SPAI) variables were performed to measure the dependent variables pre-treatment and post-treatment for both conditions. Significant improvements were observed in the social anxiety scores of ACT participants from pre-treatment to post-treatment. The groups did not differ significantly in terms of AP. The results showed that ACT treatment is promising for SAD. As a result, ACT treatment through reducing experiential avoidance and increasing psychological flexibility has a significant effect on social anxiety. The need for further research in order to evaluate the effectiveness of ACT on this population in larger samples was discussed.

Keywords: Acceptance and commitment therapy, social anxiety disorder, agoraphobia, psychological flexibility and experiential avoidance

Introduction
Anxiety disorders are among the most common psychological disorders that make people look for mental health services and treatment (Codd et al., 2011). Moreover, SAD significantly impairs daily functioning (Caouette and Guyer, 2014).

Agoraphobia is a fear that appears as avoidance of putting oneself into situations that might cause panic attacks. AP is usually accompanied with other disorders that occur in panic attacks. It is estimated that 1-2% of the general population suffers from AP (APA, 2000).

Genetic and environmental factors, negative life experiences, cognitive factors such as interpretation bias and attention bias, negative mental images, and social skill deficits are among the effective factors in SAD and AP (Castro et al., 2014).

The most important conclusion drawn from the studies on SAD indicates the considerable importance of early diagnosis and treatment. This is due to the fact that cognitive, psychological and physical aspects of a disorder are reinforced over time and consequently it will be more difficult to overcome. However, people with such a disorder often try to get treatment when it is too late after encountering numerous problems in their lives. Given that this disorder is not known in many parts of the world and it is assumed to be due to medical conditions, people with SAD usually tend to self-medicate. Research has shown the effectiveness
of two types of treatments for SAD: 1- drug treatment
2- short-term psychotherapy such as cognitive
behavioral approaches whose main elements include
gradual exposure to social situations (Pourfaraj Omran,
2011).

ACT is a third wave behavioral therapy approach
that includes eclectic and metaphorical techniques,
paradox, and mental focus skills in psychological
interventions. Its theoretical framework is the
cognitive-rational theory, and it includes the processes
of acceptance, commitment, and behavior change by
building psychological flexibility (Hayes, 2002).

This therapeutic relationship is formed through
6 main processes, including acceptance, cognitive
defusion, self as context, contact with the present
moment, values, and committed action. These 6 main
concepts will result in psychological flexibility (Hayes
and Lillis, 2012).

As noted earlier, the main goal of ACT is to
build psychological flexibility, which means the
ability to choose an appropriate and practical answer
among the available options, not merely for the purpose
of avoiding thoughts, feelings, memories or chaotic
tendencies as an imposed option. In this therapy,
individuals’ psychological acceptance of mental
experiences (thoughts, feelings etc.) is first increased,
and ineffective control measures are reciprocally
reduced.

Although human beings are social creatures who
are, emotionally and materially speaking, always in
need of social communication, which seems really
essential nowadays, this kind of communication is not
easily possible for everyone. Factors such as lack of
self-confidence, other’s evaluation, fear of rejection,
and criticism make individuals feel anxious in social
situations. If this anxiety becomes severe it can
turn into a disorder called SAD or SP. Therefore,
prevention of SAD and disability in doing daily
activities can improve individual and community health
(WHO, 2000).

The aim of ATC intervention is to change the
processes involved in the psychopathology of these
disorders. This approach must be used to treat people
with SAD. Various studies on SAD (Baruch et al., 2009
and Twohig et al., 2010) confirm the effectiveness of
this therapeutic approach.

Given the importance of the ACT therapeutic
approach and since no individual study on SAD and AP
has been conducted in Iran, this study aims to
investigate the effectiveness of this therapeutic
approach in SAD and AP.

Materials and Methods

Participants

Participants consisted of 16 Iranian patients aged
18 to 28 who were referred to three selected clinics and
received the criteria of SAD, according to the fourth
edition of diagnostic and statistical manual of mental
disorders (DSM IV-TR) through a structured clinical
interview. Exclusion criteria for the study were as
follows: history of drug dependence in the past 6
months, organic mental disorders, previous
participation in CBT or ACT therapy sessions for the
treatment of SAD, absence in more than 3 therapy
sessions, and unwillingness to cooperate in the study.
Above 38% and 62% of the participants were female
and male, respectively. The mean and standard deviation
of the age of the ACT and control conditions was 22.38 ±
1.55 and 23.5 ± 1.96, respectively. In terms of
educational status, 56.3% of the participants had a high
school diploma or less, 31.3% of them had an associat
degree and a bachelor’s degree, and 12.5% had a master’s
degree. Moreover, in terms of employment, 87.5% of the
participants were unemployed, 6.3% had government
jobs, and 6.3% were self-employed.
Since the epidemiological studies have shown a high rate of comorbidity of axis 1 disorders with SAD, participants with comorbid disorders were included in the study. However, to enter to the study, SAD was considered as the primary disorder with more intensity than the other disorders. Nine participants (56.25%) had at least one comorbid axis 1 disorder, including depression and anxiety. Drugs administration was kept at a constant dose during the period of treatment.

**Procedures**

After the diagnostic interview, meeting the inclusion criteria, and completion of pre-treatment assessments, 22 patients were selected for the study. The subjects were randomly assigned to two ACT and control conditions to receive 12 sessions of weekly one-hour individual ACT therapy. Participants were not aware of their placement until the first session. A six-week pre-treatment evaluation was considered before treatment to control the natural healing process which was observed by previous studies (Wetherell *et al.*, 2011). Two participants in the ACT condition, and one in the control condition withdrew further study due to improvement in symptoms of anxiety and lack of cooperation. Treatment began with 19 participants (9 ACT and 10 control). Participants were instructed not to increase or decrease the medication dose (if they were using any) and continue consumption as directed by the psychiatrist. SAD and AP protocol was performed on the ACT condition, and control condition received no intervention. One of the participants of ACT condition abandoned the treatment, and 8 participants completed the post-treatment evaluation trials. Also, two participants of control condition refused to attend the post-treatment evaluations. In total, data on 16 participants were presented for evaluation and analysis (Fig.-1).

**Interventions**

The treatment protocol included a 12 individual sessions ACT treatment, which was developed based on the acceptance and commitment group therapy for SAD (Fleming and Kocovsky, 2009). The developed protocol with a 5-question questionnaire using a 5-point Likert scale was given to 10 expert clinicians for data validation. The clinicians were then asked to express their opinions about these agendas. The questions were as follows: First question: suitability for a clinical problem. Second question: coordination with session times. Third question: coordination with culture. Fourth question: coordination with ACT concepts. Fifth question: efficiency. The statistical analysis of the questionnaires indicated the desirability of the statistics related to the reliability of assessors α = 0.787, which
Table 1. Mean and standard deviation of the answers to the questions by experts

<table>
<thead>
<tr>
<th>Questions</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Q</td>
<td>4.7</td>
<td>0.48</td>
<td>10</td>
</tr>
<tr>
<td>Second Q</td>
<td>4.2</td>
<td>0.42</td>
<td>10</td>
</tr>
<tr>
<td>Third Q</td>
<td>4.2</td>
<td>0.42</td>
<td>10</td>
</tr>
<tr>
<td>Forth Q</td>
<td>4.9</td>
<td>0.32</td>
<td>10</td>
</tr>
<tr>
<td>Fifth Q</td>
<td>4.7</td>
<td>0.48</td>
<td>10</td>
</tr>
</tbody>
</table>

shows the applicability of the developed protocol. Table 1 shows the mean and standard deviation of the answers to the questions by experts.

The main goals of this protocol’s treatment sessions include introducing the idea of creative hopelessness and acceptance and commitment therapy to patients, making a connection between social anxiety symptoms and behavior, tendency towards social anxiety instead of controlling it, introducing the idea of defusion with social anxiety and the feelings resulting from it and assessing patients’ ability in practicing this capability and providing practical solutions, drawing a distinction between the conceptualized and observed self, introducing the importance of personal values and tendency towards values and helping patients find living spaces and personal values, making a connection between goals, actions, and finally emphasizing that actions must be according to values, practicing the goals for behavioral activation and treatment commitments (Zettle, 2007). Table 2 shows a summary of the developed protocol for SAD.

Measures

In this study, the Social Phobia and Anxiety Inventory (SPAI) were used. This inventory is empirically derived from a combined answers of cognitive, physical, behavioral, and social phobia dimension. It also includes 45 questions and 2 general SP and AP subscales. Among the questions, 32 are about SP and the other 13 are used for assessing AP.

Table – 2. ACT protocol for social anxiety disorder (SPAI)

<table>
<thead>
<tr>
<th>Treatment Sessions</th>
<th>A Summary of Treatments given in each Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt;</td>
<td>Explaining the pattern of mindfulness in the first session and each treatment session. Ensuring the confidentiality of the subjects discussed with patients in the treatment room.</td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt;</td>
<td>Introducing the concept of creative hopelessness: Have the patients ever undergone any treatment to overcome SAD? Explain it if there was any.</td>
</tr>
<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt;</td>
<td>Continuing the concept of creative hopelessness: Make the patients aware that it is due to controlling that the treatments performed so far have been ineffective (if any treatment has been performed)</td>
</tr>
<tr>
<td>4&lt;sup&gt;th&lt;/sup&gt; and 5&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Explaining the issue of control, and that avoidance cannot solve the problem, but causes more problems. Explaining the Jelly Doughnut Metaphor – explaining the concept of living in the moment.</td>
</tr>
<tr>
<td>6&lt;sup&gt;th&lt;/sup&gt; and 7&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Discussing willingness and consent to accepting social anxiety as alternative to avoiding from it.</td>
</tr>
<tr>
<td>8&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Getting familiar with the concept of self-as-context, meaning a kind of cognitive detachment for specific thinking about self to reach cognitive flexibility.</td>
</tr>
<tr>
<td>9&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Explaining the concept of cognitive defusion; that is, abandoning the idea that an individuals’ thought can completely define and explain their experiences (detachment of thought from us and paying attention to it as merely a thought)</td>
</tr>
<tr>
<td>10&lt;sup&gt;th&lt;/sup&gt; and 11&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Getting familiar with the concepts of values, goals, and clarification of values; that is, it is only through clarified values that patient’s behaviors could be guided towards doing what is or are important in their lives.</td>
</tr>
<tr>
<td>12&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Finally, explaining the concept of psychological flexibility, which is the main goal of the treatment; that is, having different behavioral choices. This happens when individuals consciously accept their disturbing thoughts and behave according to their values. Creating more motivation for doing the exercises provided in each session, and emphasizing the increase of accuracy and attempt to keep behavioral commitments.</td>
</tr>
</tbody>
</table>
Items associated with AP were specifically used for the analysis of the behavioral responses of patients in different situations. The continuum of the answers is rated based on the following spectrum: “never, rarely, seldom, sometimes, often, very often, and always.” Each answer is given 0-6 scores, respectively. Various studies have shown that this test is highly sensitive to treatment effects and is more efficient than the other tests designed for this disorder.

The reliability of this test is calculated using internal consistency (Cronbach’s alpha) and test-retest methods (Safizadeh, 2007). Using Cronbach’s alpha coefficient, the reliability was obtained as 0.99. Moreover, after 4 weeks, the correlation coefficient of test-retest for SP, AP, and SP minus AP subscales was 0.95, 0.90, and 0.97, respectively. Factor analysis was used to confirm the essential components of the inventory, and the inventory was divided into two main factors (SP and AP) and three subsidiary factors, which represents a kind of construct validity. Moreover, the correlation between the scores of the researcher-made test and the SPAI test were assessed as an indicator of criterion validity. Overall, the obtained reliability and validity coefficients for the SPAI were satisfactory. Therefore, this inventory is a convenient and reliable tool to identify SP and AP.

In a preliminary study on a sample of 30 subjects selected from the study population, the reliability of this tool was also assessed, and Cronbach’s alpha coefficient for SP subscale was obtained as 0.97 and for the AP was assessed 0.92. This finding indicates the applicability of this inventory on the population with SP and AP.

**Data Analytic Plan**

T-test was used for independent groups to evaluate the difference between the scores of SPAI subscales for the pre-treatments of ACT and control conditions. To test the hypotheses of the study, and due to the presence of pre-treatment and post-treatment and the lack of missing data, analysis of covariance was used in order to suppress the effect of pre-treatment.

Since the difference between SP and AP subscales (SP minus AP) was significantly correlated with SP and AP subscales, analysis of covariance (ANCOVA) was used separately for the analysis.

Also, multivariate analysis of covariance (MANCOVA) was used to test the hypotheses related to SP and AP as dependent variables.

To evaluate the effects of intervention on the dependent variables, the partial eta squared values of F values were calculated. This type of effect size is preferred over Cohen's d in multivariable models since “Cohen's d, becomes less convenient in multivariate designs in which comparisons are more complex than simply the difference between two means. Further, Cohen (1988) shows equations for converting d to $\eta^2$.” (Tabachnick and Fidell, 2012). Therefore, the measures were described based on $\eta^2$.

**Results**

**Preliminary analysis**

There were no significant differences between the conditions with regard to age (p=0.84), gender (p=0.59), or marital status (p=0.61) and also with regard to pre-treatment scores of the ACT condition and control condition. Table 3 shows the mean and standard deviation of SP, AP, and the difference in pre-treatment and post-treatment of SP and AP in ACT and control participants.

Before starting the treatment, two participants from the ACT condition, and one participant from the control condition withdrew treatment. Also, one participant from the ACT condition dropped out of treatment. Moreover, two participants from the control
Results of multivariate analysis of covariance from pre-treatment to post-treatment on 8 participants of the ACT condition and 8 participants of the control condition indicated that the SP scores of the ACT condition was significantly lower than the scores of the control condition ($F=38.522$, $p=0.000$). However, no significant difference was observed between the two conditions regarding AP ($F=3.054$, $p=0.106$).

Eta coefficients related to the SP variable showed a strong relationship between a therapeutic intervention and SP. In other words, 76.2% of the variance in SP is explained by ACT treatment. Eta coefficient related to AP shows the poor effect therapeutic intervention on this variable (20.3%). Table 4 summarizes the results of effects’ tests between subjects for these two variables.

### Outcome measures

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### Table - 3: Means and Standard Deviations for Self-Report Measures at Each Assessment Point for ACT and Control Condition Participants

<table>
<thead>
<tr>
<th>Scales</th>
<th>Conditions</th>
<th>ACT ($N=8$)</th>
<th>Control ($N=8$)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M (SD)$</td>
<td>$M (SD)$</td>
<td></td>
</tr>
<tr>
<td>SP</td>
<td>Pre-treatment</td>
<td>139 (59.58)</td>
<td>140.75 (58)</td>
</tr>
<tr>
<td></td>
<td>Post-treatment</td>
<td>61.62 (43.71)</td>
<td>116.12 (42.45)</td>
</tr>
<tr>
<td>AP</td>
<td>Pre-treatment</td>
<td>9.5 (8.96)</td>
<td>9.75 (8.6)</td>
</tr>
<tr>
<td></td>
<td>Post-treatment</td>
<td>9 (8.63)</td>
<td>9.87 (5.3)</td>
</tr>
<tr>
<td>SP-AP</td>
<td>Pre-treatment</td>
<td>129.5 (58.55)</td>
<td>131 (56.98)</td>
</tr>
<tr>
<td></td>
<td>Post-treatment</td>
<td>52.62 (39.54)</td>
<td>106.25 (40.59)</td>
</tr>
</tbody>
</table>

SP: Social Phobia; AP: Agoraphobia; SP-AP: Social Phobia minus Agoraphobia

### Table – 4. Results of Tests of Between-Subjects Effects

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>$F$</th>
<th>Sig.</th>
<th>$\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP</td>
<td>16344.402</td>
<td>1</td>
<td>16344.402</td>
<td>38.522</td>
<td>.000</td>
<td>.762</td>
</tr>
<tr>
<td>AP</td>
<td>165.233</td>
<td>1</td>
<td>165.233</td>
<td>3.054</td>
<td>.106</td>
<td>.203</td>
</tr>
</tbody>
</table>

SP: Social Phobia; AP: Agoraphobia

### Table – 5. Results of ANOVA test

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>$F$</th>
<th>Sig.</th>
<th>$\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP-AP</td>
<td>12574.294</td>
<td>1</td>
<td>12574.294</td>
<td>22.515</td>
<td>.000</td>
<td>.634</td>
</tr>
</tbody>
</table>

SP-AP: Social Phobia minus Agoraphobia

condition were not present for the post-treatment evaluations (Fig.- 1).
Results of analysis of covariance in evaluations of differences between ACT and control conditions regarding the residuum of SP scores minus AP showed a significant difference ($F = 22.515$, $p = 0.000$). Eta coefficient of 0.634 indicated the strong effect of intervention (63.4%) on the dependent variable from pre-treatment to post-treatment. Table 5 shows the results of the ANOVA test for the difference between SAD and AP.

Most participants were highly satisfied with the treatment (87.5%) and the therapist (100%). All participants confirmed that the treatment reduced their anxiety, social avoidance, fear and said that they would recommend it to others with similar problems.

Discussion

This preliminary study aimed to investigate the effectiveness of ACT in reducing the symptoms of SAD and AP among the Iranian population. The results showed that 12 individual sessions of ACT could significantly reduce the symptoms of SAD and SAD-AP in participants of the ACT condition.

Various studies inside and outside Iran that have investigated the relationship of ACT with different types of anxiety disorders in different populations are all indicative of the effectiveness of this therapeutic approach in reducing the symptoms of anxiety.

The results of a study on the effectiveness of ACT, identification of therapeutic mediators, and provision of solutions to optimize treatment methods for generalized anxiety disorder showed that ACT was effective in generalized anxiety disorder. This study also determined the role of acceptance and value-based life variables as therapeutic mediators (Mozhdehi et al., 2011). Another study also investigated the effectiveness of ACT in reducing math anxiety among the high school students in Isfahan. The results of this study also proved the effectiveness of ACT (Abedi et al., 2010).

Moreover, Block (2002) showed that using methods like ACT in which attention and awareness are considered as the main components are effective in treating anxiety disorders. In another preliminary study in which ACT was used on 11 university students with SAD individually, the results were indicative of the effectiveness of this therapy in reducing students’ SAD (Block and Wulfert, 2000).

In another study by Zettle (2003) on 24 university students with math anxiety, ACT and systematic desensitization methods were used for 6 weeks. The results showed a significant reduction in students’ math anxiety.

In a study by Pourfaraj Omran (2011) on 24 students with SAD, ten 90-minute ACT sessions were held (group therapy) and the results showed that at the end of the treatment, the scores of SAD in the experimental group was significantly reduced compared with the control condition. These results also showed that this reduction did not significantly change during one month follow-up.

Similarly a study on panic disorder with AP, which only evaluated the cognitive symptoms of AP, Meuret reported a significant reduction in panic disorder with AP (Meuret et al., 2012).

Addressing the mechanism of action of ACT to know how it works and what its targets are can be helpful in explaining the findings of this study. In fact, ACT works through two parts: 1- correction of previous issues, including accepting experiences, cognitive defusion, detachment to the conceptualized self, and living in the moment). 2 - Provision of solutions (treatment process), including specifying values, clarifying them, commitment to them, and finally reaching psychological flexibility.

ACT intervenes within 6 stages, different from previous therapies for SAD. By making individuals
choosing experiential acceptance instead of controlling, this type of therapy makes them accept their anxiety with satisfaction and willingness and no more avoid it. Moreover, ACT takes advantage of the concept of cognitive defusion, which means abandoning the idea that an individuals’ thought can completely define and explain their experiences (detachment of thought from us and paying attention to it as merely a thought), that thoughts are relative and indefinite (whether our own thought about anxiety or those we become anxious when we encounter them and we are worried about their approval). Therefore, it can be concluded that the way others might think about us is not necessarily true.

Studies also show that clinically, ACT is highly effective in psychological flexibility. In this regard, in a study on the effect of ACT in a group of patients with SAD with an average age of 42, (Asmundson and Hajistavropoulos, 2006) found that avoidance and anxiety symptoms were significantly reduced, and this reduction continued during the 3-month follow-up period.

Therefore, compared to other psychotherapy approaches, the main advantage of ACT for SAD is that it considers both motivational and cognitive aspects in order to increase the effectiveness and continuation of the treatment more. It seems necessary to provide training programs in order to aware most of the people who suffer from SAD, yet do not take it seriously or try to treat it. Moreover, it would be desirable if therapists could be prepared for effective interventions for this type of disorder through training new therapeutic approaches such as ACT.

It also seems that the present protocol is not effective in reducing behavioral responses of AP, and mainly targets cognitive symptoms of anxiety. Therefore, it is recommended that further studies be conducted on the effects of ACT on cognitive, behavioral, and physiological responses of AP with simultaneous evaluation of cognitive flexibility levels on a wider sample of the target population.

References


