

Thought Control Strategies in Generalized Anxiety Disorder and Major Depressive Disorder and Their Relationships With Trait Anxiety

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ABSTRACT

Objective: The present study aims to investigate thought control strategies in Generalized Anxiety Disorder (GAD), Major Depressive Disorder (MDD), and the relationship of these metacognitive strategies with trait anxiety, as a construct of emotional vulnerability.

Methods: 60 patients with diagnosis of GAD and MDD and 30 control subjects (nonpatients) were selected from the university students. Participants answered to Beck Anxiety Inventory (BAI), Beck Depression Inventory–II (BDI-II), Thought Control Questionnaire (TCQ), State Trait Anxiety Inventory (STAI), and General Health Questionnaire-28 (GHQ-28). The data was analyzed by Manova and Enter regression.

Results: The results showed that GAD group was distinguished from the control group by their greater use of worry and punishment strategies. The depression group was differentiated from nonpatient group by the greater use of worry strategy and lesser use of distraction and reappraisal strategies. The GAD group was distinguished from MDD group by greater use of reappraisal strategy and lesser use of worry strategy. Worry and punishment strategies can positively predict ($P < 0.001$ and $P = 0.001$) trait anxiety while distraction and reappraisal negatively predict ($P < 0.001$ and $P = 0.047$) it.

Conclusion: GAD and MDD patients use maladaptive thought control strategies more frequently and these maladaptive metacognitive strategies can be predictors of trait anxiety as an underlying pathology.

1. Introduction

Metacognitive theory of psychological disorders is based on a principle that most of the psychological disorders are caused by a pattern of extended thinking. This pattern is called the Cognitive Attentional Syndrome (CAS). It consists of a chain of verbal thought in the form of worry and rumination, a pattern of focusing attention on threat and coping strategies. There are paradoxical effects in CAS that extends negative thinking rather than terminating it

(As Wells said in an interview in 2012). For example, focusing attention on a threat reinforces beliefs about the presence of danger. Avoiding experiences such as anxiety prevents the person from discovering the truth about the benign nature of emotion (Wells, 2010).

The CAS, as Wells (2012) has indicated, is driven by underlying beliefs about thinking, which falls into two broad categories of positive beliefs (e.g. I must worry in order to cope) and negative beliefs (e.g. some thoughts are dangerous). According to metacognitive theory, inflexible and re-

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Table 1. Demographic characteristic of participants.

Gender	
Male	n = 37
Female	n = 53
Marital status	
Single	n= 49
Married	n=41
Level of education	
Diploma	n=23
BS.	n=35
Ms.	n=27
PhD.	n=5

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current styles of thinking in response to negative thoughts, feelings, and beliefs underlie mood and anxiety symptoms (Fergus et al., 2013).

Facing negative or intrusive distressing thoughts, a person's metacognitive beliefs determine the strategy he or she chooses to respond (Moore & Abramowitz, 2007). Researches indicate that people use variety of strategies to resist or control negative thoughts or intrusions meanwhile some of these strategies are associated with affective distress (Clark, 2004; Wells & Davies, 1994).

Among the various ways in which one might resist or control intrusions, there are 5 thought-control strategies empirically identified by Wells and Davies (1994). According to Moore and Abramowitz (2007), these strategies include: 1) distraction (e.g. analyzing the meaning of the intrusion), 2) reappraisal of the thought (e.g. analyzing the meaning of the intrusion), 3) social strategies (e.g. discussing the thought with others), 4) worrying about the thought (e.g. dwell on a potential negative outcome), and 5) self-punishment (e.g. become angry with oneself for thinking the thought). However, when alternative and more adaptive responses are possible, the person may choose to ignore a negative thought at all, seek social support, or shift attention onto distracting activities (Wells & Carter, 2009).

Individuals with psychological disorders persist in repetitive negative styles of thinking - namely, active worry/rumination in response to stress - in order to control the intrusions or avoid threat because they hold metacognitive beliefs about the advantages of engaging in such strategies and/or beliefs, which end up in unhelpful strategies of mental regulation (Wells, 2000).

Worrying and rumination are invariably biased and make the individual focus on negative information. This leads to a distorted impression of the self and the world. For example, worrying focuses on potential danger in the future, but has lit-

tle relationship with the true probability of dangerous events (Wells, 2009).

Worry is a common cognitive feature of anxiety disorders and a cardinal feature of generalized anxiety disorder. GAD is associated with frequent negative thoughts and beliefs about worry (Ruscio & Borkovec, 2004). Although rumination is the key feature of depression (Wells, 2009) it has been reported that worry is also high in individuals with depression (Starcevic, 1995). Several studies have examined thought control strategies among different psychological disorders. For example, GAD patients use more punishment and worry strategies while reported less use of distraction and social control strategies compared to nonpatient group (Coles and Heimberg, 2005).

OCD patients often use worry and punishment strategies as thought control strategies and use distraction strategy less frequent in comparison with control group (Abramowitz et al., 2003). Tendency towards using worry strategy as a thought control strategy is a predictor of the subsequent development of Post Traumatic Stress Disorder after motor vehicle accidents (Holeva et al., 2001).

Studies have demonstrated consistent positive relationships between metacognitive beliefs, emotional vulnerability, and a wide range of psychological disorders (Wells, 2002). Erroneous metacognitions are reported to be associated with trait emotion (Cartwright-Hatton & Wells, 1997), anxiety disorders (Wells & Carter, 2001), and depression (Papageorgiou & Wells, 2001). In a study of Wells and Carter (2009), it was demonstrated that worry strategy as a metacognitive control strategy is associated with psychological vulnerability as indicated by high scores on trait anxiety. The findings also suggested that distraction is independently associated with lowered vulnerability.

Trait anxiety is a term which was first suggested by Spielberger. He differentiated between two anxiety constructs:

Table 2. The means and standard deviations on TCQ subscale scores for 3 groups.

Group and variables		Mean	SD
Distraction	GAD	12.83	4.103
	MDD	10.60	10.60
	Control	14.80	3.745
Punishment	GAD	12.13	14.108
	MDD	10.17	3.185
	Control	9.60	2.541
Reappraisal	GAD	13.40	2.884
	MDD	10.83	2.641
	Control	14.63	3.605
Worry	GAD	12.03	3.557
	MDD	14.90	4.174
	Control	9.17	2.692
Social control	GAD	13.20	3.145
	MDD	12.27	2.840
	Control	14.03	3.709

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transitory or state anxiety and anxiety proneness as a personality trait (Spielberger, Vagg, 1995). Spielberger et al., have emphasized that anxiety can be conceptualized in two ways: as a stable disposition and as a transient emotional state that everyone experiences from time to time (Tovilovic et al., 2009). State anxiety has been defined as an unpleasant emotional response while coping with threatening or dangerous situations (Spielberger, 1983; Tovilovic et al., 2009), whereas trait anxiety refers to a stable individual that in anticipated threatening situation tends to respond with increased state anxiety.

GAD and MDD are two prevalent psychological disorders, which are burdens on families and societies. In order to provide appropriate therapies, one should understand the underlying pathologies of these disorders. Thus, in this study, we want to investigate the most frequently used thought control strategies in GAD and MDD patients in comparison to the nonpatient group and demonstrate which thought control strategies discriminate between GAD and MDD patients. We also aimed to investigate the relationship between thought control strategies and trait anxiety, which is a construct assumed to be related with emotional vulnerability.

2. Methods

Participants

This was a from after the fact study and sampling method was purposive. A total of 90 adults (18-60 years old) comprising 37 males and 53 females, participated in the present study: 30 patients with GAD, 30 patients with MDD, and 30

nonclinical controls without any history of anxiety or emotional disorder. GAD and MDD participants were recruited from psychiatric clinics and received a DSM-IV diagnosis of GAD and MDD by psychiatrists. Control group recruited from the students of Social Welfare and Rehabilitation Sciences University who had no history of emotional or anxiety disorder.

It was assured that participants of clinical group were in the early stages of treatment. Exclusion criteria for all 3 groups were history of anxiety or emotional disorders, serious medical problem, and comorbid affective or anxiety disorders. All participants completed demographic questionnaire and a consent form.

Measures

Beck Depression Inventory

Beck Depression Inventory II (BDI-II) is a 21-item self-administered inventory designed to measure severity of depression in adults and adolescents (Beck, Steer, Ball, & Ranieri, 1996). Scores on BDI range from 0 (no symptoms) to 63 (very severe symptoms) (Beck et al., 1996). The Persian BDI-II had high internal consistency (Cronbach $\alpha = 0.87$) and acceptable test-retest reliability ($r = 0.74$) (Ghassemzadeh, Mojtabai, Karamghadiri, & Ebrahimkhani, 2005).

State-Trait Anxiety Inventory

State-Trait Anxiety Inventory (STAI; Spielberger, Gorsuch, Lushene, Vaag, & Jacobs, 1983) is a 40-item

Table 3. Model summary of predicting trait anxiety according to thought control strategies.

Model	R	R square	Adjusted R square	Std.error of the estimate
1	0.720	0.518	0.490	10.006

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self-report measure of general anxiety. The first 20 items assess state anxiety, or how the participant feels 'right now;' and the second 20 items assess trait anxiety, or how the participant feels 'generally'. Scores range from 20 to 80 on each subscale. The STAI has high reliability and validity (Speilberger et al., 1983). The present study used only the trait subscale (STAI-T). In the Persian version, the internal consistency was found to be high for both measures (Cronbach $\alpha = 0.9$ and $= 0.90$, respectively) (Azimi & Zarghami, 2001).

Generalized Anxiety Disorder Questionnaire-IV

Generalized anxiety disorder questionnaire-IV (GAD-Q-IV; Newman et al., 2002) is a 9-item self-report measure of diagnostic and statistical manual of mental disorders (4th ed., DSM-IV; American psychiatric Association, 1994) diagnostic criteria for GAD. Newman et al., reported 83% sensitivity and 89% specificity using a cutoff point of 5.7 on the GAD-Q-IV, good convergent and discriminant validity, and test-retest reliability of 0.64 during a 2-week period. Because of the GAD-Q-IV response format, Newman et al., reported that analyses such as internal consistency are not appropriate for this measure. Thus, α values were not reported.

General Health Questionnaire-28

This questionnaire was developed by Goldberg in 1972 and consisted of 4 subscales. It is one of the most popular and reliable scales for screening psychological disorders. Scores on GHQ-28 range from 0 to 84. The psychometric properties of GHQ-28 were determined according to the Iranian psychiatric population. Subsequently, the Cronbach α and concurrent validity were obtained based on correlation with the checklist of psychological problems as 0.91 and 0.72, respectively (Molavi, 2002).

Beck Anxiety Inventory

Beck anxiety Inventory (BAI) is a 21-item, self-report measure designed to measure severity of anxiety in adults (Beck & Steer, 1990). Scores on BAI range from 0 (no symptom) to 63 (very severe symptoms) (Beck & Steer, 1990). The Persian version of BDI has high internal consistency ($\alpha = .92$) and acceptable validity and reliability (Kavyani & Mousavi, 2014).

Thought Control Questionnaire

Thought Control questionnaire (TCQ) is a 30-item measure of individual differences in strategies used to control unpleasant and/or unwanted thoughts. There are 5 subscales that assess the following strategies: distraction (TCQ-d), social control (TCQ-s), worry (TCQ-w), punishment (TCQ-p), and re-appraisal (TCQ-r). Responses to items are made on a 1-4 rating scale (1= never, 2 = sometimes, 3 = often, 4 = almost always). Scores on each subscale range from 6 to 24. Internal consistency of items of the Persian version of questionnaire ranges from 0.64 to 0.74 (Fata et al., 1389).

3. Results

Data from questionnaires were analyzed by SPSS19 software. Demographic characteristics of participants are shown in table 1.

Thought Control Strategies in GAD, MDD and Nonpatient Groups

The means and standard deviations on TCQ subscale scores for each group are presented in table 2.

MANOVA (Multiple Analysis of Variance) demonstrated significant differences among groups with regard to thought control strategies.. Post-hoc (Scheffe) tests demonstrated that GAD patients used more reappraisal strategy than MDD group ($P = 0.007$) and MDD group reported more use of worry strategy in comparison to GAD group ($P = 0.008$). The control group scored higher on distraction ($P < 0.001$) and reappraisal strategies ($P < 0.001$) than MDD group and scored lower on worry strategy than both patient groups ($P = 0.008$, $P < 0.001$). For punishment, score of GAD group was lower ($P = 0.016$) than control group.

In brief GAD group was distinguished from nonpatient group by the greater use of worry and punishment strategies. The depressed group was differentiated from nonpatient group by the greater use of worry strategy and less use of distraction and reappraisal strategies. The GAD group was distinguished from MDD group by the greater use of reappraisal and less use of worry strategies.

Table 4. Coefficients of predicting trait anxiety according to thought control strategies

Model	Unstandardized coefficients B Std.E	Standardized coefficients B	T
Distraction	-0.947 0.315	-0.263	-3.010
Self punishment	1.046 0.321	0.260	3.256
Reappraisal	-0.688 0.372	-0.168	-1.850
Worry	1.364 0.276	0.406	4.942
Social control	-0.084 0.348	-0.020	-0.242

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Thought control strategies and trait anxiety

In order to investigate that which TCQ subscales predict trait anxiety enter regression was utilized and the results are shown in table 3 . Based on the results TCQ subscales were responsible for 49% variance in trait anxiety.

According to table 4 Two of the subscales positively predicted trait anxiety and Table 4: Coefficients of predicting trait anxiety according to thought control strategies.

Worry strategy can positively predicts 40.6%($P < 0.001$) trait anxiety and the second positive predictor is punishment strategy that predicts 26% ($p = 0.002$) trait anxiety. Distraction is a thought control strategy that negatively predicts 26.03% ($P = 0.003$) trait anxiety.

4. Discussion

The present study was aimed to investigate the differences of GAD and MDD patients in the use of metacognitive strategies and the role of these strategies in setting patients apart from non patients. Based on our results, group of patients utilize worry as a thought control strategy when facing an stressful life event, whilst non-patient group report more frequent use of reappraisal and distraction in such situations.

As Wells (2009) explained worry is about analyzing and focusing on intrusive thoughts and this strategy is likely to prolong negative ideas and negative affects rather than allowing these inner experiences to fade (Wells & Carter, 2009) but by the use of distraction, attention shifts to neutral thoughts and activities (Nolen-Hoeksema, 1991).

Despite the fact that in metacognitive theory, worry is one of the main factors of GAD (Wells, 2009), in this

study it was more elevated in MDD group and it was one of the main subscales that differentiate between GAD and MDD groups.

Rumination is a key feature in diagnosis of MDD and it is a repetitive style of thinking which is focused on symptoms of depression, its reasons and consequences (Nolen-Hoeksema, 1991). Nolen-Hoeksema (1991) and Wells and Mathews (1994) have found that facing an intrusive thought, MDD patients use rumination as a metacognitive strategy in order to avoid negative emotions. On the other hand Segerstrom et al., (2000) have reported that rumination and worry strategy have an overlapping of 16 to 21 percent. The elevation of worry subscale in MDD group can be best explained by the frequent use of rumination in MDD patients this finding is consistent with Wells and Carter (2009) that declared that it is likely that TCQ also taps the use of rumination strategy as well as worry strategy.

As well as worry strategy the other thought control strategy that differentiated GAD group from non-patients is the frequent use of self punishment strategy. This result is consistent with Coles and Heimberg (2005) that also found elevated punishment strategy as well as worry strategy in GAD patients.

Punishment strategies include getting angry at the self, slapping the self, and telling one-self that if the negative thoughts don't stop, something bad will happen. These strategies represent extensions of negative emotions and worry about thought. They closely resemble the meta-worry and meta-emotions that have been identified as important factors in the maintenance of GAD and other disorders in metacognitive theory (Wells & Carter, 2009; Wells, 2009).

The other main factor in distinguishing MDD group from GAD and non-patient group is less use of reappraisal strategy in MDD group. Based on our analysis,

less use of reappraisal with frequent use of worry set MDD group and GAD group apart and less use of reappraisal strategy with less use of distraction strategy together, can differentiate between MDD group and non-patients.

As Folkman (1997) declared, Reappraisal is an active and useful strategy to face with stressful events of life and people who were trained to use reappraisal as a metacognitive strategy, reported higher self-esteem, life satisfaction and less symptoms of depression in long term (Gross & John, 2003).

In comparison with rumination, reappraisal is related with more positive and less negative emotions (Grishman et al., 2011). Distraction is a strategy which makes negative emotions less in short term and if it doesn't accompany with reappraisal or problem solving, it will lead to maladaptive behaviors like avoidance (Nolen-Hoeksema et al., 2008).

These findings are congruent with recent study findings that declared utilizing of reappraisal and distraction together in non-patient group is significantly higher than MDD group.

As mentioned before GAD and MDD patients use metacognitive strategies that worsen their negative emotions instead of terminating them. For instance using worry to control negative thoughts (e.g. dwell on other worries) instead of ceasing negative internal emotions makes them worse and long-standing. If worry accompanies with less use of reappraisal, as seen in MDD patients, a complicated combination of negative emotions and intrusive thoughts will be made.

Our results show that using worry and self punishment as metacognitive strategies are positive predictors of trait anxiety. Meanwhile distraction strategy is a negative predictor for it. These findings are compatible with Wells and Carter (2009) that considered distraction strategy as an ability to shift attention to other thoughts and activities in the presence of negative and distressing ideas.

Distraction can be an indicator of attention flexibility, which is one of the training targets in metacognitive therapy of patients with anxiety and depression (Wells & Carter, 2009). On the whole the use of thought control strategies are maladaptive, while some of them are helpful.

As pure forms of GAD and MDD cannot be found easily in clinical contexts and they are usually comorbid

with other psychological disorders (e.g. Specific phobia or Dysthymia), the samples might not truly represent the disorders and this may distort the results of present study. Small sample size was another limitation of this study which may be a threat for external validity of it.

In order to have more accurate results, in future this study can be repeated with a bigger sample size. As the severity of disorders may make a difference in utilizing thought control strategies in future studies relationships between severity of disorders and thought control strategies can be also examined.

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