

Are Metacognitive Factors Common in Generalized Anxiety Disorder and Dysthymia?

Abolfazl Mohammadi¹, Banafsheh Farzinrad², Fatemeh Zargar^{3*}, Ali Mehrabi⁴, Behrooz Birashk⁵

1. Department of Psychiatry, Faculty of Psychology and Educational Sciences, Tehran University of Medical Sciences, Tehran, Iran.

2. Department of Psychiatry, Faculty of Medicine, Yazd University of Medical Sciences, Yazd, Iran.

3. Department of Clinical Psychology, Faculty of Medicine, Kashan University of Medical Sciences, Kashan, Iran.

4. Department of Clinical Psychology, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran.

5. Department of Clinical Psychology, Faculty of Behavioral and Mental Health, Iran University of Medical Sciences, Tehran, Iran.

Article info:

Received: 13 Mar. 2013

Accepted: 10 Jun. 2013

Keywords:

Metacognitive factors,
Metacognition,
Generalized anxiety disorder,
Dysthymia

ABSTRACT

Objective: Metacognitions are vulnerability factors in predicting development of psychological disorders especially Generalized Anxiety Disorder (GAD) and dysthymia, which are highly comorbid. Many studies have shown that GAD and dysthymia have similar underlying metacognitive factors but the results are contradictory. The aim of present research was to test this hypothesis by using new instruments that has been designed to measure multiple metacognitive factors.

Methods: Fifty-eight students referred to university counseling centers in Tehran who met the diagnostic criteria of DSM-IV-TR for dysthymia (n=21), GAD (n=18), and comorbidity of them (n=19) were selected. The participants completed Meta Cognitions Questionnaire (MCQ), Anxious Thoughts Inventory (AnTI), Thought Control Questionnaire (TCQ) and the Ruminative Response Scale (RRS).

Results: Results of one-way analysis of variance demonstrated no significant differences between groups on metacognitive factors.

Conclusion: It seems that GAD and dysthymia are associated to common underlying metacognitive factors. This study confirms the results of some previous research indicating similarities between the two disorders.

1. Introduction

Historically, research on metacognition originated in child psychology. Its foundation has been based on analysis of changes in reasoning abilities associated with cognitive development and maturation. In its broadest sense, this construct was defined as the ability to think about one's thinking in order to problem-solving and social processing. In recent years, this construct has inserted to theoretical explanations of clinical syndromes (Corcoran & Segal, 2008).

In the theory, metacognitions are general causal factors in the development of many psychological disorders (Wells, 1997, 2000, 2009). Metacognition theory emphasizes on be-

liefs and knowledge that individuals have about their own thinking patterns. Metacognitions are as the positive and negative beliefs about thinking (e.g. "I must worry in order to be prepared"; "I cannot control my thoughts").

Positive and negative metacognition has been recognized in many emotional disorders especially in Generalized Anxiety Disorder (GAD) and different types of depression such as dysthymia. Patients with GAD have positive beliefs about the benefits of worry (e.g. "Worrying helps me cope") and negative beliefs about the danger and uncontrollability of worry (e.g. "My worrying is bad for me") (Ellis & Hudson, 2010). The researches consistent with the theory have been shown that metacognitive beliefs were strongly associated with pathological worry (Davis & Valentiner, 2000; Wells &

* Corresponding Author:

Fatemeh Zargar; PhD Candidate

Address: Department of Clinical Psychology, Faculty of Medicine, Kashan University of Medical Sciences, Kashan, Iran.

E-mail: fatemehzargar@gmail.com

Papageorgiou, 1998). In Major Depressive Disorder (MDD), individuals begin to ruminate because they have positive beliefs about the value of such a process. In addition, they believe that this process is out of their control (Holeva, Tarrier, & Wells, 2001; Wells & Sembi, 2004).

Worry and rumination—the main characteristics of GAD and dysthymia while being seen as different, share many similarities with each other. Both have components of recurring, repetitive thoughts that are focused on negative events (Fresco, Frankel, Mennin, Turk, & Heimberg, 2002; Segerstrom, Tsao, Alden, & Craske, 2000). A number of studies have documented strong correlations between worry and rumination. For instance, Segerstrom and her colleagues (2000) reported the highest correlations between worry and global rumination (a measure of repetitive thought) and between worry and depressive rumination in both undergraduate and clinical samples. This finding was repeated in other researches (Calmes & Roberts, 2007; Fresco et al., 2002; Muris, Roelofs, Rassin, Franken, & Mayer, 2005). On the other hand, findings indicate that both worry and rumination relate substantially more to anxiety symptoms than to depressive symptoms (Carter, 2010).

Although individuals endorse positive beliefs about worry and rumination and perceive worrisome or ruminative thoughts as generally helpful, they also have negative beliefs suggesting that worry and rumination are associated with perceptions of uncontrollability and potential adverse consequences. Beliefs about sustained thinking (positive metacognition) and the uncontrollability and danger of thoughts (negative metacognition) lead to worry, rumination, and also fixation on threat and counterproductive thought control processes or thought appraisal strategies (Yılmaz, Gencöz, & Wellsc, 2011).

Watkins (2004) has introduced five cognitive strategies associated with worry (distraction, problem-solving, dwelling on consequences, thought stopping or minimizing, and neutralizing or taking no action). He also identified five strategies associated with rumination (dwelling on consequences, neutralizing thought through mental effort, using negative mental control, distraction, and taking no action). Both worry and rumination were significantly correlated with the strategy related to dwelling on consequences (Watkins, 2004).

In spite of the apparent conceptual overlaps between worry and rumination, other researches have indicated that the two constructs retain unique, differentiating features (Hong, 2007; Muris, Roelofs, Meesters, & Boomsma, 2004; Papageorgiou & Wells, 2001; Watkins, 2004). A few studies have examined how the worry and rumination constructs differentially relate to or contribute to anxiety and mood disorders (Fresco et al.,

2002; Segerstrom et al., 2000; Watkins, 2004). These studies have primarily utilized measures such as the Penn State Worry Questionnaire (PSWQ) (Meyer, Miller, Metzger, & Borkovec, 1990) and little research has examined newer measures of worry and rumination such as the Anxious Thoughts Inventory (AnTI) (Wells, 1994) and Thought Control Questionnaire (TCQ) (Wells & Davies, 1994). Therefore, our study intended to investigate multiple metacognitive factors in GAD and dysthymia using new helpful instruments. In addition, we added a group with mixed anxiety and depression to the study for a better comparison of metacognitive factors.

2. Methods

Participants

58 individuals comprising 46 (79.31%) females and 12 (20.69%) males participated in the present study. The age of the sample ranged from 19 to 38 years ($M=23.92$, $SD=4.48$). 26 participants (44.82%) were undergraduate students and the remained 32 ones (55.17%) were postgraduate at the moment of data collection. They were selected voluntarily from counseling centers of University of Tehran (UT), Sharif University of Technology (SUT) and Iran University of Sciences & Technology (IUST).

Sample included individuals with a diagnosis of generalized anxiety disorder ($n=18$), dysthymia ($n=21$), and comorbid GAD and dysthymia ($n=19$). They have been diagnosed by PhD students of clinical psychology. Exclusion criteria were (1) presence of any cognitive disorders, (2) substance abuse, (3) personality disorders and other disabling medical conditions. Moreover, participants did not report the use of the any medications at the time of or prior to the study.

Procedure

The present study attempted to investigate metacognitive factors in three groups of emotional disorders. All participants were recruited from counseling centers. Individuals who appeared to meet diagnostic criteria of GAD, dysthymia and mixed anxiety and depressive disorder according to Structured Clinical Interview for Diagnostic and Statistical Manual of Mental Disorders (SCID) were identified which administered by PhD students in clinical psychology.

After receiving information about the study, and expressing interest in participating, potential participants were given the consent form to sign. Then, they completed the package of research questionnaires. Finally, the one-way Analysis Of Variance (ANOVA) was used to determine whether there are any significant differences between the means of three groups in metacognitive factors.

Measures

Meta-Cognitions Questionnaire 30 (MCQ-30)

A Persian version (Shirinzadeh Dastgiri, Goodarzi, Rahimi, & Naziri, 2009) of MCQ-30 (Wells & Cartwright-Hatton, 2004) was used in this study. This measure assesses individual differences in metacognitive beliefs, judgments and monitoring tendencies. It consists of five factors assessed by 30 items in total. These subscales were labeled Positive Beliefs about Worry (POS), Negative Beliefs about the Controllability of Thoughts and Corresponding Danger (NEG), Cognitive Confidence (CC), Need for Control (NC), and Cognitive Self-Consciousness (CSC). Respondents are asked to rate whether they “generally agree” with the statements presented. The original MCQ (Wells & Cartwright-Hatton, 2004) and its Persian version possesses good internal consistency and convergent validity, as well as acceptable test-retest reliability.

Thought Control Questionnaire (TCQ)

The TCQ (Wells & Davies, 1994) is a self-report instrument that measures the frequency of using various approaches to coping with unwanted thoughts. Respondents rate how often they use 30 different strategies using a scale from 1 (never use) to 4 (almost always use). Items loaded on five subscales (6 items per each subscale) including distraction, punishment, worry, social control, and re-appraisal. Scores on each subscale range from 6 to 24. The Persian version (Fata, Mootabi, Moloodi, & Ziayee, 2010) of this questionnaire that possess adequate internal consistency was used in this study.

Anxious Thoughts Inventory (AnTI)

AnTI (Wells, 1994) is a 22 item self-report measure used to assess multiple domains of worry. It produces subscale scores for social worry; health worry and meta-

worry (worry about worry). Despite the diversity of worry content, these three subscales have reliably emerged as distinct domains across multiple analyses (Wells, 1994). These subscales correlate well with other measures of anxiety and alpha coefficients range between 0.75 and 0.84, indicating very good reliability. The Persian version of TCQ (Fata et al., 2010) was administered in this study.

The Ruminative Response Scale (RRS)

The Persian version (Bagherinezhad, Salehi, & Tabatabaie, 2010) of RRS (Nolen-Hoeksema & Morrow, 1991) includes 22 items describing responses to depressed mood. Self-focused rumination, symptom-focused rumination, and focus on the possible causes and consequences of dysphoric mood are total 3 subscales of this instrument. Each item is rated on a Likert scale ranging from 1 (almost never) to 4 (almost always).

3. Results

One-way ANOVA was used to examine the differences between three groups. Mean and standard deviation for each group and the results of ANOVA have been shown in Table 1. The results showed that there were not any significant differences between three groups on the metacognitive factors.

4. Discussion

The aim of present study was to examine metacognitive factors in GAD, dysthymia and mixed anxiety–depressive disorder.

Firstly, given the results on MCQ, our study showed that there were no significant differences between metacognitive beliefs, judgments and monitoring tendencies in 3 groups. In other words, positive and negative beliefs about worry, cognitive confidence, beliefs about the need

Table 1. Mean (Standard deviation) & ANOVA for metacognitive factors in dysthymia, GAD & comorbid of them.

Group	POS	NEG	CC	NC	CSC	Dist	Pun	Reap	Wor	Soc	Rum
Dysthymia	13.3 (4.16)	15.29 (5.85)	10.45 (4.5)	13.85 (3.66)	68.94 (14.7)	13.95 (3.89)	11.81 (3.89)	13.55 (2.61)	10.7 (3.84)	13.35 (2.64)	54.61 (13.7)
GAD	13.94 (5.7)	15.78 (4.28)	12.6 (3.99)	15.78 (3.92)	74.33 (14.22)	14.11 (4.31)	13.5 (3.38)	14.39 (2.66)	13.5 (4.07)	12.88 (3.95)	62.05 (6.62)
Comorbid	11.65 (5.52)	14.67 (4.42)	10.56 (4.35)	14.89 (3.96)	66.64 (17.48)	14.05 (3.42)	14.26 (2.98)	13.94 (2.18)	12 (4.04)	12.47 (2.54)	18.17 (6.04)
F	0.94	0.23	1.48	1.2	1.67	0.01	2.98	0.54	2.34	2.07	1.87
Sig	0.39	0.79	0.24	0.31	1.97	0.99	0.06	0.59	0.11	0.68	0.16

PRACTICE in
CLINICAL PSYCHOLOGY

POS=Positive Beliefs about Worry; NEG=Negative Beliefs about Uncontrollability and Danger of Worry; CC=Cognitive Confidence; NC=Need for Control; CSC=Cognitive Self-Consciousness; DIS=Distraction; PUN=Punishment; REAP=Reappraisal; WOR=Worry; SOC=Social Control; RUM=Rumination.

to control thoughts and cognitive self-consciousness were common in participants fulfilling the criteria of GAD, dysthymia and mixed anxiety-depression disorder. Studies have shown relationships among rumination and worry in both undergraduate and clinical samples (Papageorgiou & Wells, 2001; Watkins, 2004). Thus, it can be concluded that rumination and worry could be present together in an individual and patients with dysthymia and mixed anxiety-depressive disorder have similar metacognitive beliefs with GAD patients.

Common positive beliefs in rumination and worry are facilitating problem solving and preventing future mistakes and failures (Borkovec & Miranda, 1999; Watkins & Baracaia, 2001). Negative beliefs about rumination and worry centered on themes of uncontrollability, potential harm, and interpersonal and social consequences (Papageorgiou & Wells, 2001). Therefore, metacognitive beliefs (positive and negative), the need to control thoughts and other metacognitive variables in worry and rumination may be common. On the other hand, these similarities between worry and rumination are shown in cognitive confidence. Patients with GAD suffer from lack of confidence in one's problem-solving abilities, heightened frustration while solving a problem, and negative doubts about outcomes associated with problem-solving efforts (Robichaud & Dugas, 2005a, 2005b). The present study suggested that the two constructs are also similar regarding cognitive confidence.

Secondly, there were no differences between various approaches to coping with unwanted thoughts in 3 groups. In other words, patients with GAD, dysthymia or mixed anxiety-depressive disorder do not have significant differences in distraction, punishment, worry, social control, and re-appraisal strategies. This is consistent with findings of other studies (Watkins, 2004). Watkins (2004) examined whether particular appraisals and response strategies associated with intrusive thoughts increased tendencies to worry or to ruminate and found significant correlations between worry and rumination.

Other studies have compared the mean worry scores obtained from the anxious and depressed groups and showed that the groups did not significantly differ in terms of reported frequency and intensity of pathological worry (Starcevic, 1995; Szabó & Lovibond, 2002). In addition, some of cognitive distortions in depression seem similar to the experience of intrusive thoughts or worries in anxiety disorders. For example, commonly experienced depressive cognitions are catastrophizing (thinking that worst possible outcome is the most likely to occur), selective abstraction (attending more strongly to negative

events and discounting positive ones), and misattributing blame (Whiting, 2012). Therefore, it seems that worry and rumination are similar in cognitive distortions.

The above findings could be considered as the basis of similarity of the two constructs in the strategies. Worry and punishment subscales were positively correlated with measures of disordered cognition, which suggests that these subscales represent maladaptive thought control strategies (Whiting, 2012).

On the other hand, taking questions of the TCQ into consideration, one may conclude that questions in each subscale are not quite specific to worry and could occur in rumination. For example, some questions measuring each strategy including distraction (e.g. "I keep myself busy"), social (e.g. "I talk to a friend about the thought"), worry (e.g. "I worry about more minor things instead"), punishment (e.g. "I get angry at myself for having the thought"), and reappraisal (e.g. "I try a different way of thinking about it") resemble to those taken by ruminative persons. Therefore, it is not unexpected to obtain similar scores in 3 groups on this instrument.

Third, there were no differences between multiple domains of worry in 3 groups. It means that patients with GAD, dysthymia and mixed anxiety-depressive disorder did not have any differences in social worry; health worry and meta-worry (worry about worry). The content of worry and rumination seem close together. Andrews and Borkovec (1988) later extended the definition of worry suggested by Borkovec et al. (1983) by including cognitions associated with both anxious and depressed affect, with anxious content focused on uncertain future events and depressive content focused on past events or past losses as well as hopelessness about the future.

In a recent study, participants rated depressive thoughts as significantly more past oriented than anxious thoughts, but the two types of thoughts did not significantly differ in terms of present or future orientation (Papageorgiou & Wells, 2001). It seems that there are similar concerns in GAD and dysthymia. One of the similarities between worry and rumination is that both are associated with concerns about control and uncertainty (Freeston et al., 1994) and domains of worry (social worry, health worry and meta-worry) are related to inability to control and certainty. People may also shift from rumination to worry. When in a depressed person inactivity and isolation are not reinforced by others, he/she concern about social relations or social worry (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008). Even concerns about lack of social support may trigger the sense of lack of self-care ability (or health worry).

Fourth, there were no significant differences between responses to depressed mood in 3 groups. It means that there are no differences between our participants with diagnoses of GAD, dysthymia and mixed anxiety-depressive disorder in self-focused, symptom-focused, and focus on the possible causes and consequences of dysphoric mood.

It seems that rumination and worry are similar in many components. Both are repetitive, preservative forms of thought that are self-focused (Barlow, 2004). Both are associated with and exacerbate depression and anxiety (Abbott & Rapee, 2004; Barlow, 2004). Rumination and worry are associated with anxiety and other negative emotional states (Nolen-Hoeksema et al., 2008). On the other hand, based on Response Styles Theory (RST) passive and repetitive focus on symptoms, the possible causes and consequences of these symptoms initially defined rumination (Papageorgiou & Wells, 2004) have been implicated in a host of disorders such as GAD, not just depression (Smith & Alloy, 2009).

More recent researches (McLaughlin & Nolen-Hoeksema, 2011) have suggested rumination as a transdiagnostic factor responsible for the co-occurrence of symptoms of depression and anxiety in both adolescents and adults. These findings highlight the importance of targeting rumination in transdiagnostic treatment approaches for emotional disorders (McLaughlin & Nolen-Hoeksema, 2011). However, these results are incompatible with researchers indicating the differentiation of worry and rumination and that the two constructs relate differently to anxiety and depression (Hong, 2007; Muris et al., 2004; Papageorgiou & Wells, 2001; Wells & Carter, 2001). Future studies are yet needed to examine the true nature of these factors in emotional disorders and potential moderator and mediators that likely account for these scientific discrepancies.

The most important limitation of this study is small sample size and merely selecting college students. It also did not include the equal number of two genders. Therefore, generalizing the results to the other clinical populations of GAD and dysthymic patients should be considered consciously.

References

- Abbott, M. J., & Rapee, R. M. (2004). Post-event rumination and negative self-appraisal in social phobia before and after treatment. *Journal of Abnormal Psychology, 113*(1), 132-144.
- Bagherinezhad, M., Salehi, J., & Tabatabaie, M. (2010). [Relationship between rumination and depression in Iranian college students (Persian)]. *Studies in Education & Psychology, 11*(1), 21-38.
- Barlow, D. H. (2004). *Anxiety and its disorders: The nature and treatment of anxiety and panic*. New York: Guilford Press.
- Borkovec, T. D., & Miranda, J. (1999). Between-group psychotherapy outcome research and basic science. *Journal of Clinical Psychology, 55*(2), 147-158.
- Calmes, C. A., & Roberts, J. E. (2007). Repetitive thought and emotional distress: Rumination and worry as prospective predictors of depressive and anxious symptomatology. *Cognitive Therapy and Research, 31*(3), 343-356.
- Carter, J. A. (2010). *Worry and Rumination: Measurement Invariance Across Gender* (Doctoral dissertation). Logan, Utah: Utah State University. Retrieved from <http://digitalcommons.usu.edu/etd/805>.
- Corcoran, K. M., & Segal, Z. V. (2008). Metacognition in Depressive and Anxiety Disorders: Current Directions. *International Journal of Cognitive Therapy, 1*(1), 33-44.
- Davis, R. N., & Valentiner, D. P. (2000). Does meta-cognitive theory enhance our understanding of pathological worry and anxiety? *Personality and Individual Differences, 29*(3), 513-526.
- Ellis, D. M., & Hudson, J. L. (2010). The metacognitive model of generalized anxiety disorder in children and adolescents. *Clinical Child and Family Psychology Review, 13*(2), 151-163.
- Fata, L., Mootabi, F., Moloodi, R., & Ziayee, K. (2010). [Psychometric properties of Persian version of thought control questionnaire and anxious thought inventory in Iranian students (Persian)]. *Journal of Psychological Models and Methods, 1*, 81-104.
- Freeston, M. H., Gagnon, F., Ladouceur, R., Thibodeau, N., Letarte, H., & Rhéaume, J. (1994). Health-related intrusive thoughts. *Journal of Psychosomatic Research, 38*(3), 203-215.
- Fresco, D. M., Frankel, A. N., Mennin, D. S., Turk, C. L., & Heimberg, R. G. (2002). Distinct and overlapping features of rumination and worry: The relationship of cognitive production to negative affective states. *Cognitive Therapy and Research, 26*(2), 179-188.
- Holeva, V., Tarrier, N., & Wells, A. (2001). Prevalence and predictors of acute stress disorder and PTSD following road traffic accidents: Thought control strategies and social support. *Behavior Therapy, 32*(1), 65-83.
- Hong, R. Y. (2007). Worry and rumination: Differential associations with anxious and depressive symptoms and coping behaviour. *Behaviour Research and Therapy, 45*(2), 277-290.
- McLaughlin, K. A., & Nolen-Hoeksema, S. (2011). Rumination as a transdiagnostic factor in depression and anxiety. *Behaviour Research and Therapy, 49*(3), 186-193.
- Meyer, T. J., Miller, M. L., Metzger, R. L., & Borkovec, T. D. (1990). Development and validation of the Penn State Worry Questionnaire. *Behaviour Research and Therapy, 28*(6), 487-495.
- Muris, P., Roelofs, J., Meesters, C., & Boomsma, P. (2004). Rumination and worry in nonclinical adolescents. *Cognitive Therapy and Research, 28*(4), 539-554.
- Muris, P., Roelofs, J., Rassin, E., Franken, I., & Mayer, B. (2005). Mediating effects of rumination and worry on the links between neuroticism, anxiety and depression. *Personality and Individual Differences, 39*(6), 1105-1111.

- Nolen-Hoeksema, S., & Morrow, J. (1991). A prospective study of depression and posttraumatic stress symptoms after a natural disaster: the 1989 Loma Prieta Earthquake. *Journal of Personality and Social Psychology, 61*(1), 115.
- Nolen-Hoeksema, S., Wisco, B. E., & Lyubomirsky, S. (2008). Rethinking rumination. *Perspectives on Psychological Science, 3*(5), 400-424.
- Papageorgiou, C., & Wells, A. (2001). Metacognitive beliefs about rumination in recurrent major depression. *Cognitive and Behavioral Practice, 8*(2), 160-164.
- Papageorgiou, C., & Wells, A. (2004). Nature, functions, and beliefs about depressive rumination. In C. Papageorgiou & A. Wells (Eds.), *Depressive rumination: Nature, theory and treatment* (pp. 3-20). Chichester: Wiley.
- Robichaud, M., & Dugas, M. J. (2005a). Negative problem orientation (Part I): psychometric properties of a new measure. *Behaviour Research and Therapy, 43*(3), 391-401.
- Robichaud, M., & Dugas, M. J. (2005b). Negative problem orientation (Part II): construct validity and specificity to worry. *Behaviour Research and Therapy, 43*(3), 403-412.
- Segerstrom, S. C., Tsao, J. C. I., Alden, L. E., & Craske, M. G. (2000). Worry and rumination: Repetitive thought as a concomitant and predictor of negative mood. *Cognitive Therapy and Research, 24*(6), 671-688.
- Shirinzhadeh Dastgiri, S., Goodarzi, M. A., Rahimi, C., & Naziri, G. (2009). [Study of factor structure, validity and reliability of metacognitions questionnaire-30 (Persian)]. *Journal of Psychology, 12*(1), 445-461.
- Smith, J. M., & Alloy, L. B. (2009). A roadmap to rumination: A review of the definition, assessment, and conceptualization of this multifaceted construct. *Clinical Psychology Review, 29*(2), 116-128.
- Starcevic, V. (1995). Pathological worry in major depression: A preliminary report. *Behaviour Research and Therapy, 33*(1), 55-56.
- Szabó, M., & Lovibond, P. F. (2002). The cognitive content of naturally occurring worry episodes. *Cognitive Therapy and Research, 26*(2), 167-177.
- Watkins, E. (2004). Appraisals and strategies associated with rumination and worry. *Personality and Individual Differences, 37*(4), 679-694.
- Watkins, E., & Baracaia, S. (2001). Why do people ruminate in dysphoric moods? *Personality and Individual Differences, 30*(5), 723-734.
- Wells, A. (1994). A multi-dimensional measure of worry: Development and preliminary validation of the anxious thoughts inventory. *Anxiety, Stress & Coping, 6*(4), 289-299.
- Wells, A. (1997). *Cognitive therapy of anxiety disorders: A practice manual and conceptual guide* (1st ed.). Chichester: Wiley.
- Wells, A. (2000). *Emotional disorders and metacognition: Innovative cognitive therapy*. Chichester: Wiley.
- Wells, A. (2009). *Metacognitive therapy for anxiety and depression*. New York, U.S.A.: Guilford Press.
- Wells, A., & Carter, K. (2001). Further tests of a cognitive model of generalized anxiety disorder: Metacognitions and worry in GAD, panic disorder, social phobia, depression, and nonpatients. *Behavior Therapy, 32*(1), 85-102.
- Wells, A., & Cartwright-Hatton, S. (2004). A short form of the metacognitions questionnaire: properties of the MCQ-30. *Behaviour Research and Therapy, 42*(4), 385-396.
- Wells, A., & Davies, M. I. (1994). The thought control questionnaire: A measure of individual differences in the control of unwanted thoughts. *Behaviour Research and Therapy, 32*(8), 871-878.
- Wells, A., & Papageorgiou, C. (1998). Relationships between worry, obsessive-compulsive symptoms and meta-cognitive beliefs. *Behaviour Research and Therapy, 36*(9), 899-913.
- Wells, A., & Sembi, S. (2004). Metacognitive therapy for PTSD: a preliminary investigation of a new brief treatment. *Journal of Behavior Therapy and Experimental Psychiatry, 35*(4), 307-318.
- Whiting, E. R. (2012). *Development and preliminary validation of the thought control questionnaire* (MA Thesis). Baton Rouge, LA: Louisiana State University.
- Yılmaz, A. E., Gencöz, T., & Wells, A. (2011). The temporal precedence of metacognition in the development of anxiety and depression symptoms in the context of life-stress: A prospective study. *Journal of Anxiety Disorders, 25*(3), 389-396.