

Comparison of Thought-Action Fusion in Peoples with Obsessive-Compulsive Disorder and Major Depression Disorder

Ghamari Kivi Hossein^{1,*}, Mohammadipour rik Ne'mat², Mikaeili Niloofar¹

¹Department of Psychology, Faculty of Literature and Human Science, University of mohaghegh Ardabili, Ardabil province, Iran
²MA in Clinical Psychology, Faculty of Literature and Human Science, University of mohaghegh Ardabili, Ardabil province, Iran

Abstract Thought-Action Fusion (TAF) refers to the tendency to assume incorrect casual relationship between ones own thoughts and external reality, in witch, thoughts and actions are treated as equivalents. This construct is presence to development and maintenance of many psychological disorders. The Aim of present study is comparison TAF and its levels include moral and likelihood TAF, among Obsessive-Compulsive Disorder (OCD), Major Depression and normal groups. Thus three groups included 150 persons were selected by available sampling method in private and governmental psychiatric centers in Ardabil city, and then, they responded to Beck Depression Inventory, Padua Inventory and TAF scale. Data was analyzed using MANOVA. Results revealed that, there is significant differences between OCD and Major Depression groups with normal group in moral TAF($p < .1$), and likelihood TAF($p < .1$), but, there is no significant differences between OCD group and Major Depression group in moral TAF and likelihood TAF. The results indicated that, moral and likelihood TAF had equal levels in OCD and Major Depression Disorder, thus they could not differentiate OCD from Major Depression Disorder.

Keywords Thought-Action Fusion, Obsessive Compulsive Disorder, Major Depressive Disorder

1. Introduction

TAF refers to the belief that thoughts and actions are inextricably linked[1]. In the TAF theory, thought and action are treated as equivalents[2]. The contemporary TAF concept arose from Rachman's[3] and Salkovskis'[4] theories and clinical observations of patients with obsessional thinking, where it was noticed that OCD patients assume that a thought is like an action[4]. Shafran, Thordarson, and Rachman[5], first formally introduced and investigated the concept. They developed a measure of TAF that has been incorporated into most subsequent research. TAF is a special two forms: 1-Moral TAF: is the belief that unacceptable thoughts are morally equivalent to overt unacceptable actions. 2-Likelihood TAF: refers to the belief that certain thoughts cause particular events, or at least increase the likelihood of such events occurring. Two domains of likelihood TAF have been proposed: A: likelihood self, which refers to events occurring to oneself, and B: likelihood others, which refers to events occurring to others, as a consequence of one's thoughts[1].

TAF concept has compiled since 1990 decades in OCD articles. Before, the researchers studied this concept as magical thinking[5]. Magical thinking refers to beliefs that defy culturally accepted laws of causality[6]. It has been argued to be a central cognitive feature of OCD[6,7].

Two major disorders that are widely associated with TAF considered are Obsessive-Compulsive Disorder and Major depressive disorder. OCD is defined by two central phenomena: 1-Obsessions: obsessions are persistent ideas, thoughts, impulses, or images that are experienced as intrusive and inappropriate and that cause marked an anxiety or distress. 2- compulsions; compulsions as "repetitive behaviors (e.g. hand washing, ordering, checking) or mental acts (e.g. praying, counting, repeating words silently) the goal of which is to prevent or reduce an anxiety or distress, not to provide pleasure or gratification"[8]. Most obsessions involve thoughts about contamination, repeated doubts, a need to have things in a particular order, aggressive impulses, or sexual imagery, and the most common compulsions involve cleaning and checking[9]. Prevalence of this disorder is, about 2/5 percent in the lifetime[8].

According to the DSM-IV-TR criteria for diagnosing a major depressive disorder one or both of the following two required elements need to be present: Depressed mood, or Loss of interest or pleasure. It is sufficient to have either of these symptoms in conjunction with four of a list of other

* Corresponding author:

h_ghamari@givi@yahoo.com (Ghamari Kivi Hossein)

Published online at <http://journal.sapub.org/ijap>

Copyright © 2012 Scientific & Academic Publishing. All Rights Reserved

symptoms, these include: 1-Feelings of overwhelming sadness or fear, or seeming inability to feel emotion. 2-Marked decrease of interest in pleasurable activities. 3-Changing appetite and marked weight gain or weight loss. 4-Disturbed sleep patterns, either insomnia or sleeping more than normal. 5-Changes in activity levels, restless or moving significantly slower than normal. 6-Fatigue, both mental and physical. 7-Feelings of guilt, helplessness, anxiety, and/or fear. 8-Lowered self-esteem. 9-Decreased ability to concentrate or make decisions. 10-Thinking about death or suicide. Improper drug or alcohol use is not a diagnostic symptom, but often accompanies and may be a causal factor in major depressive[8].

Thought-Action Fusion (TAF) is one of a number of cognitive variables that have been extensively researched in relation to obsessive-compulsive disorder (OCD) and other anxiety disorders in recent years. The impetus for the increasing attention paid to cognitive constructs in OCD has been dissatisfaction with the traditional concept of OCD as a condition in which compulsions develop with the main purpose of alleviating anxiety. Clinical experience and research have repeatedly indicated that underlying beliefs and appraisals are often intervening factors between obsessions and compulsions and those they often play a role in maintaining OCD[1].

Review of researches about TAF show that, TAF is one of the fundamental cognitive bias that is play fundamental role in the development and maintenance of obsessive-compulsive disorder .[9,10,11,12,13,14,15,16,17,18].

Small to medium correlations between total scores on the Thought-Action Fusion Scale(TAFS);[5] and the Maudsley Obsessive-Compulsive Inventory (MOCI);[10]have been consistently found (between .20 and .38; e.g.,[9,11,12,13,14,15,16]). A similar magnitude of relationship appears to exist for the association between TAF scale scores and the Padua[17]and Padua revised[18]scales[6,11,14].

Correlations between each of the TAF subscales and obsessive-compulsive symptoms also appear to fall within this small to medium range[5,12,14].

Previous studies have found that TAF is related to not only OCD, but also to other disorders such as Major depressive, Panic, Generalized Anxiety Disorder, Social Phobia [19,20,21], Schizophrenia[22], Schizotypy[23], and also with variety features such as inflated sense of responsibility and thought suppression[15,16,24],intrusion[25],and guilt [9,26], relationship shown.

TAF appears to be related to depression in both adolescents and adults. However, the significant correlations between TAF and depression have typically been small to medium in magnitude, ($r=.42$; in an adolescent sample[19], $r=.33$ [21]; $r=.38$ [26], $r=.15$ [14], $r=.10$ to $.42$ [5]).

Shafran and her colleagues[5], and Rassin and his colleagues[12,14] have shown that TAF-Likelihood was more strongly associated with obsessionality than TAF-Morality, and depression more related to TAF-Morality. Abramowitz and his colleagues[19] found that only TAF

moral ($r=.22$), but not TAF-likelihood-other ($r= -.5$) or TAF-likelihood-self ($r= -.5$) were correlated with depression. These findings suggest that TAF moral may be more directly related to depressive symptoms than TAF likelihood, which is perhaps more related to anxiety. In contrast to Shafran and her colleagues[5], and Rassin and his colleagues[12,14], Yorulmaz and his colleagues[9] in Turkish samples suggested as compared to TAF-Likelihood, TAF-Morality scores seemed to be more strongly correlated with obsessive-compulsive symptoms. They attributed these differences to cultural differences and religious beliefs of their country people.

A little research is done in Iran, with thought-action fusion topic.

A research with patients with obsessive compulsive disorder was shown, between symptoms of OCD and thought-action fusion exists the positive and significant correlation, and sub Scale of likelihood-other TAF, is the best predictor of Compulsions and the cluster of checking symptoms and sub Scale of likelihood-self TAF, is the best predictor of obsessions and the cluster of doubting symptoms[27].

Another study showed, that among TAF beliefs and the symptoms of obsessive-compulsive disorder in patients with obsessive-compulsive disorder exists a significant positive relationship[28].

Also another study in the University, with student samples, which showed subscales of TAF to predict the main symptoms of OCD[29].

Since the TAF is assumed one of the cognitive biases involved in Major depressive Disorder[9,12,19,21] ,and Obsessive-Compulsive Disorder[5,7,12,14],and these two disorders, are respectively, third and fourth most common psychiatric diagnoses[8], and because of the importance today of cognitive therapy have in the treatment or reduce symptoms of OCD and depression, so that Zucker and his colleagues[30] research shown, even short and simple educational interventions (providing simple messages of anti-TAF),can be effective in treatment and reduce anxiety and willingness to neutralize. Thus this indicated that we need to investigate TAF in OCD and Major depressive Disorder.

Considering that research done in this area, does not clearly expression relationship between TAF and its various types to Psychopathology such as OCD and Major depressive, and on the other hand there is very few published Researches in our country with subject of TAF, therefore, this study want to answer to the questions are the following:

2. Method

2.1. Subjects

In the present study, we selected 50 outpatients (10 Males and 40 Females) with Obsessive-Compulsive Disorder and 50 outpatients (8 Males and 42 Females) with Major depression Disorder and 50 normal persons (10 Males and 40

Females) by available sampling method in psychiatric private and governmental center in Ardabil city. These individuals was searching pharmacotherapies, referred to psychiatrists and had received Major depression disorder and Obsessive-Compulsive Disorder (More examples of OCD, were having compulsions such as washing and checking) diagnosis from Psychiatrists. Their disease duration was from 1 to 3 years and their ages range was between 16 to 38 years. Control group was selected of students and fellows patients who had similar situations with the participating groups and based on studies performed, was not psychiatric disorder and never had to see a psychiatrist. In this study were the only people who have no history of psychiatric drugs and for the first time referred to a psychiatrist. Written consent was obtained from subjects.

2.2. Procedure

Participants after diagnosis by psychiatrists, Were interviewed based on criteria for DSM-IV-TR clinical interviews by clinical psychologists to confirm the diagnosis. Patients with obsessive-compulsive disorder responded to Padua Inventory and Thought-action fusion scale and patients with depression disorder, responded to Beck Depression Inventory and Thought-action fusion scale. The control group only responded to the Thought-action fusion scale.

2.3. Measures

Participants completed the following self-report measures during their assessment:

2.3.1. Thought-action fusion scale (TAFS)

(TAFS;[5]). This is a 19-item self-report measure of the tendency to fuse thoughts and actions. It contains 12 items that assess moral TAF (e.g. "Having a blasphemous thought is almost as sinful to me as a blasphemous action"); three items that assess likelihood-self TAF (e.g. "If I think of myself being in a car accident this increases the risk that I will have a car accident"); and four items that assess likelihood-other TAF (e.g. "If I think of a relative/friend losing their job, this increases the risk that they will lose their job). Each item is rated on a scale from 0 (disagree strongly) to 4 (agree strongly). The instrument's psychometric properties have been described by Shafran et al.[5] and Yorulmaz et al.[9] between .85 to .96. In this study, Cronbach's alpha coefficient Was obtained . / 82.

2.3.2. Padua Inventory - Washington State University Revision(PI-WSUR)

(PI-WSUR;[31]). This inventory is revision of the original Padua inventory[17], that included 39 items and 5 subscales. This inventory is a self-report measure that designed by Burns and his colleagues[31]. The instrument provides 5 sub-scales: contamination obsessions and washing compulsions(COWC),dressing/grooming compulsions (DRGRC) ,

checking compulsions(CHCK),obsessional thoughts of harm to self/others(OTAHSO)and obsessional impulses to harm self/others (OTAHSO).All items are scored on a 0(not at all) to 4(very much) scale with a total score range of 0-156.Scores for the 5 sub-scales are calculated by summing the appropriate items. MacDonald and De Silva[32] were obtained Padua reliability coefficient between .76 to .96 and its internal consistency .96. Marino and his colleagues[24], were found the Padua inventory Cronbach's alpha coefficient .93. In this study, Cronbach's alpha coefficient Was obtained . / 78.

2.3.3. Beck Depression Inventory(BDI)

(BDI;[33]). This is a 21-item measure that is widely used to assess somatic, affective, and behavioral symptoms of depression. Scores on the BDI range from 0 (no symptoms) to 63 (very severe symptoms). The sound psychometric properties of the scale are supported by an extensive literature[34]. In this study, Cronbach's alpha coefficient . / 91Was obtained.

3. Results

After data collection, data analyzed by SPSS (16 versions).

Descriptive data from this study are shown in Table 1:

Table 1. Mean and standard deviation of morality and Likelihood TAF in three groups

Groups		Mean	SD	N
Major Depression Disorder (MDD)	Moral TAF	31/62	8/53	50
Obsessive-Compulsive Disorder (OCD)		30/62	8/36	50
Control		24/68	11/44	50
Total		28/97	9/97	150
Major Depression Disorder(MDD)	Likelihood TAF	14/96	5/24	50
Obsessive-Compulsive Disorder (OCD)		14/84	6/45	50
Control		8/8	5/78	50
Total		12/62	6/64	150

The review of test research hypotheses multivariate analysis of variance (MANOVA) was used, which are as follows.

The results of Box test for the homogeneous matrix of variance - covariance, in .56 is not significant, in other words, the matrices of variance - covariance are homogeneous.

The results of MANOVA Significant test are shown in Table 2.

Table 3 summarizes the information in the multivariate analysis of variance test (MANOVA), for study differences of TAF levels in the groups.

Refer to the table, it is clear that the criterion variables ethic groups in TAF (TAFm) and likelihood TAF (TAFI) have a significant difference.

Table 2. The results of MANOVA Significant test

Effect	Test	Value	F	Hypothesis df	Error df	Sig.
Group	Wilks Lambda	.723	12.82	4	292	./...

Table 3. Tests of Between-Subjects Effects

Source	Dependent Variable	Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	Moral TAF	1407/453	2	703/727	7/711	./..1
	Likelihood TAF	1550/773	2	775/387	22/641	./...
Intercept	Moral TAF	125918/107	1	125918/107	1/380	./...
	Likelihood TAF	23914/907	1	23914/907	698/305	./...
Group	Moral TAF	1407/453	2	703/727	7/711	./..1
	Likelihood TAF	1550/773	2	775/387	22/641	./...

Table 4. Tukey post hoc test for determining the location of group differences

	I group	J group	Mean of Differences	Std. Error	Sig.	%95 Confidence Interval	
						Lower	Upper
Moral TAF	MDD	OCD	1/..	1/91	./86	-3/52	5/52
	MDD	Control	6/94	1/91	./..1	2/41	11/46
	OCD	MDD	-1/..	1/91	./86	-5/52	3/52
	OCD	Control	5/94	1/91	./..6	1/41	10/46
	Control	MDD	-6/94	1/91	./..1	-11/46	-2/41
	Control	OCD	-5/94	1/91	./..6	-10/46	-1/41
Likelihood TAF	MDD	OCD	./12	1/17	./99	-2/65	2/89
	MDD	Control	6/88	1/17	./...	4/10	9/65
	OCD	MDD	-./12	1/17	./99	-2/89	2/65
	OCD	Control	6/76	1/17	./...	3/98	9/53
	Control	MDD	-6/88	1/17	./...	-9/65	-4/10
	Control	OCD	-6/76	1/17	./...	-9/53	-3/96

To determine the location of group differences, post hoc Tukey test was used and the results are presented in Table 4.

Table 4 shows that significant differences exists between groups OCD with normal control group and major depression disorder group with normal control group in both TAF variable(Moral TAF and Likelihood TAF), and this difference is significant in level ./..1. However, there is no significant differences between groups OCD and major depression disorder group in Moral TAF and Likelihood TAF variables.

4. Discussion

The results of this study indicate that, does not exist significant differences between patients with obsessive compulsive disorder and major depression disorder in TAF, but in comparison major depression disorder and obsessive compulsive disorder patients with normal group, can be seen significant differences in the trend of amount between them.

This finding is somewhat consistent with research Abramowitz and his colleagues[19]; Shafran and her colleagues[5] and Rassin and his colleagues[14], which have reported there is no significant difference of moral TAF, in the obsessive compulsive disorder and depression groups. However, their study indicated that there are differences between OCD and depression groups in likelihood TAF so OCD group have high levels of TAF than group depression

group. But in the present study, the OCD and major depression in both TAF variables is not significantly different from each other. These differences may be due to differences in the sample because of their studies, students who formed the sample, but the present study, patients seeking medical treatment. Abramowitz and his colleagues[19], have noted that moral TAF is associated with general depression And they are not related to the specific abnormality of any of the samples (OCD, anxiety disorder, panic, social phobia and major depression). The present results indicate that thought-action fusion can not be used as a distinguishing aspect of the distinction between major depression disorder and obsessive compulsive disorder. Because the two different levels structures of TAF (ie. moral and likelihood TAF), are the same in both disorders. So it seems, when a person is healthy and does not has any psychological disorder, the TAF have a lower, but people with depression and obsessive-compulsive disorder compared with normal subjects have higher levels of TAF. The differences are true in the two domains of moral and likelihood TAF. Thus the structure of TAF can not distinguish between patients with OCD and depression groups.

In a general summary, we can say that it seems, thought-action function (TAF), is a form of cognitive distortions or biases, that may increase their sense of responsibility towards intrusions opinion and could be

vulnerable as a factor for growth and development of obsessions[25,35], and many other anxiety disorders, depression, Schizotypal, eating disorders and, ...[19,20,21,23,36], and this variable is not merely specific in OCD, but can be seen in many other psychological disorders[37].

Since the TAF making complex psychological disorders and therapeutic strategies have been applied,, and because of the importance of cognitive therapy to treat or reduce the symptoms of OCD and major depression, So that research Rassin and his colleagues[12] , demonstrated, TAF was sensitive to psychotherapy and will be change during treatment. even Zucker and his colleagues[30], illustrated, short and simple educational interventions (providing simple messages of anti-TAF), can also effective to reduce and treatment anxiety and desires of people for neutralization.

For this reason, it seems more attention to the structures of the TAF in treatment interventions, particularly cognitive and cognitive - behavioral disorders associated with OCD and major depression, may have therapeutic benefits and advantages.

ACKNOWLEDGMENTS

The Authors of this study, are grateful the sincere cooperation of D.r Fariba Sadeghi (Psychiatrist), in the early detection of patient, sampling and performance.

REFERENCES

- [1] Berle, D., & Starcevic, V. (2005). Thought-action fusion: Review of the Literature and future directions. *Clinical Psychology Review*, 25, 263-284.
- [2] Pierce, A. G. (2007). From Intrusive to oscillating Thought. *Archives of Psychiatric Nursing*, 21(5), 278-286.
- [3] Rachman, S. (1993). Obsessions, responsibility and guilt. *Behavior Research and Therapy*, 31, 149- 154.
- [4] Salkovskis, P. (1985). Obsessional-compulsive problems: A cognitive- behavioral analysis. *Behaviour Research and Therapy*, 23, 571-583.
- [5] Shafraan, R., Thordarson, D.S., & Rachman, S. (1996). Thought action fusion in obsessive compulsive disorder. *Journal of Anxiety Disorders*, 10, 379-391.
- [6] Einstein, D. A., & Menzies, R. G.(2004) . The presense of magical thinking in obsessive compulsive disorder. *Behaviour research and Therapy*, 42, 539 – 549.
- [7] Amir, N., Freshman, M., Ramsey, B., & Neary, E. (2001). Thought-action fusion in individuals with OCD symptoms. *Behaviour Research and Therapy*, 39, 765-776.
- [8] APA (American Psychiatric Association). (2000). *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR)*. (4th ed.). Washington, DC: APA.
- [9] Yorulmaz. A. E., Gençöz, T. (2004).133- Yorulmaz, O., Y Psychometric properties of the Thought-Action Fusion Scale in a Turkish sample. *Behaviour Research and Therapy*, 42, 1203-1214.
- [10] Hodgson, R. J., & Rachman, S. (1977). Obsessional-compulsive complaints. *Behaviour Research and Therapy*, 15, 389–395.
- [11] Gwilliam, P., Wells, A., & Cartwright-Hatton, S. (2004). Does metacognition or responsibility predict obsessive-compulsive symptoms: A test of the metacognitive model. *Clinical Psychology and Psychotherapy*, 11, 137-144.
- [12] Rassin, E., Diepstraten, P., Merckelbach, H., & Muris, P. (2001). Thought-action fusion and thought suppression and obsessive-compulsive disorders. *Behaviour Research and Therapy*, 39, 757-764.
- [13] Rassin, E., &Koster. E. (2003). The correlation between thought-action fusion and religiosity in a normal sample. *Behaviour Research and Therapy*, 41, 361-368.
- [14] Rassin, E., Merckelbach, H., Muris, P., & Schmidt, H. (2001). The thought-action fusion scale: further evidence for its reliability and validity. *Behaviour Research and Therapy*, 39,537-544.
- [15] Rassin, E., Muris, P., Schmidt, H., & Merckelbach, H.(2000) . Relationships between thought-action fusion, thought suppression and obsessive-compulsive symptoms: a structural equation modeling approach. *Behaviour Research and Therapy*, 38, 889-897.
- [16] Smari, J., & Ho ́lmsteinsson, H. E. (2001). Intrusive thoughts, responsibility attitudes, thought-action fusions and chronic thought suppression in relation to obsessive-compulsive symptoms. *Behavioral and Cognitive Psychotherapy*, 29, 13-20.
- [17] Sanavio, E. (1988). Obsessions and compulsions: The padua inventory. *Behaviour Research and Therapy*, 26, 169-177.
- [18] Van Oppen, P., Hoekstra, R. J., & Emmelkamp, P. M. G. (1995). The Structure of obsessive- compulsive symptoms. *Behaviour Research and Therapy*, 33, 15-23.
- [19] Abramowitz, J.S., Whiteside, S., Lynam, D., & kalsy, S. (2003). Is thought-action fusion specific to obsessive-compulsive disorder?: a mediating role of negative affect. *Behaviour Research and Therapy*, 41, 1069-1079.
- [20] Hazlett- Stevens, H., Zucker, B. G., &Craske, M. G. (2002). The relationship of thought-action fusion to pathological worry and generalized anxiety disorder. *Behaviour Research and Therapy*, 40, 1199-1204.
- [21] Muris, P., Meesters, C., Rassin, E., Merkelbach, H., & Campbell, J. (2001). Thought - action fusion and anxiety disorder symptoms in normal adolescents. *Behaviour Research and Therapy*, 39, 843 – 852.
- [22] Elif, K., Basaran, D., Hilal, D., & Ali Emre, S. (2008). Thought- action fusion: Is it present in schizophrenia? *Behaviour Change*, 25(3), 169-177.
- [23] Lee, H.J., Cogle, J. R., & Telch, M. J. (2005). Thought-action fusion and its relationship to schizotypy and OCD symptoms. *Behaviour Research and Therapy*, 43, 29-41.
- [24] Marino, T. L., Lunt, R. A., &Negy, C. (2008). Thought-action fusion: A comprehensive analysis using structural equation

- modeling. *Behaviour Research and Therapy*, 46, 845-853.
- [25] Rassin, E., Merckelbach, H., Muris, p., & Spaan, V. (1999). Thought-action fusion as a causal factor in the development of intrusions. *Behaviour Research and Therapy*, 37, 231-237.
- [26] Rachman, S., Thordarson, D.S., Shafran, R., & Woody, S.R. (1995) . Perceived responsibility: Structure and significance. *Behaviour Research and Therapy*, 33, 779-784.
- [27] Bakhshpoor, A.,and faraji, R.(2011). Relationship of thought-action fusion with obsession symptoms in obsessive compulsive disorders. *Moaser psychology*,5(2),15-22.[text in Persian]
- [28] Shirinzadeh ,S.,Nateghian,S., & goodarzi,M.A.(2009). Comparison of beliefs about thought-action fusion with OCD, Generalized Anxiety, and nonclinical persons. *Psychological Reserch*, 12(3-4),97-111.[text in Persian]
- [29] Pourfaraj, M.(2009). The Study of the Relationship of Thought-Action Fusion, the Feelings of Responsibility and Guilt with Different Dimensions of Obsessive-Compulsive Disorder Symptoms in Shiraz University Students. *Daneshvar Raftar*,16,37,69-82.[text in Persian]
- [30] Zucker, B. G., Craske, M. G., Barrios, V., & Holguin, M. (2002). Thought-action fusion: Can it be corrected? *Behaviour Research and Therapy*, 40, 653-664.
- [31] Burns, G.L., Keortge, S. G., Formea, G.M., & Sternberger, L. G. (1996). Revision of the Padua inventory of obsessive compulsive disorder symptoms: distinctions between worry, obsessions, and compulsions. *Behaviour Research and Therapy*, 34, 163-173.
- [32] Macdonald, A. M., & de Silva, P. (1999). The Assessment of obsessionality using the Padua inventory: It's validity in British non-clinical sample. *Personality and Individual Differences*, 27, 1027-1046.
- [33] Beck, A. T., Ward, C. H., Mendelsohn, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry*, 4, 561-571.
- [34] Beck, A. T., Steer, R. A., & Garbin, M. G. (1988). Psychometric properties of the Beck Depression Inventory: Twenty five years of evaluation. *Clinical Psychology Review*, 8, 77-100.
- [35] Rachman, S. (1997). A cognitive theory of obsessions. *Behavior Research and Therapy*, 35, 793-802.
- [36] Coelho, J. S., Carter, J. C., Mcfarlane, T., & Polivy, J. (2008). Just looking at food makes me gain weight: experimental induction of thought- shape fusion in eating-disordered and non-eating- disordered woman. *Behaviour Research and Therapy*, 46, 219-228.
- [37] Shafran. R.,& Rachman. S. (2004). Thought-action fusion: a review. *Journal of Behaviour Therapy and Experimental Psychology*, 35, 87-107.