

## Investigation of Relationship between Thoughts Fusion, its Components and Worry and Eating Disorders in Women

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### ABSTRACT

The main goal of the present research is to determine relationship between obsessive-compulsive and its components and eating disorders in women. Statistical population of the research included all girl interns admitted to Roodbar city technical-professional school in 2011-2012 academic years who were 800 people. 200 people were selected as sample size by means of simple random sampling. Sample members answered to Pennsylvania State worry questionnaire (PSWQ), Mir, Miller, William, Kart, Robert Howton (2010), obsessive-compulsive questionnaire (TFD), Wales, Ji William, Kart, Robert Howton (2010) and eating disorders questionnaire (EAT-26) Gardner, Olsland, Bouher and Garfingel (1982). Data was analyzed in descriptive and inferential levels. Mean and standard deviation were used in descriptive analysis. In inferential analysis, Pearson correlation test and step-by-step regression were used. Results showed that there is positive and significant relationship between thoughts fusion and all its dimensions except for thought-object fusion and eating disorders in  $\alpha=0.001$  level. In other words, as thoughts fusion increases, negative approaches to eating also increase and vice versa and in addition, there is also significant relationship between worry dimensions and negative approaches to eating. Regression test results showed that thoughts fusion and its dimensions and worry predict 8% of the variance of eating disorders.

**KEYWORDS:** eating special beliefs, thoughts fusion, worry

### INTRODUCTION

Eating disorders have turned into one of the medical priorities in psychological disorders over the past two decades. Reasons for physicians' interest in eating disorders are adverse outcomes of poor appetite and good appetite of psyche (Berkman, Bulik&Lohr, 2007) and emergence of new forms of eating disorders (Spitzer et al, 1992). For example (Favaro A, Ferrara S, Aolo, 2003) reported prevalence of psychological poor appetite and good appetitedisorders periodin Italian women as 0.2 and 4.6%. Furthermore, Hoek (1993) showed that psychological good appetite disorder level is 8.1 in 100000 people. He also reported psychological good appetite disorder as 11.4 in 100000 people. Traditionally, it is believed that eating disorders have relationship between western societies and their emphasis on slimness as beauty criterion but western criteria on slimness and beauty are beyond the borders of these countries and eastern countries have also influenced by this belief (Nobakht and Dejkam, 2000). Nobakht and Dejkam studies (2000) in Tehran showed that prevalence of period of psychological poor appetite and good appetite disorders in teenage girls are 0.9% and 3.2% respectively. Several studies have been conducted on the role of metacognitive beliefs in generalized anxiety disorders (Wales and Karter, 2001), depression (Watkinz and Brasia, 2001, as quoted from Kourkeran and Segal, 2009), psychosis and panic patients (Morrison and Wales, 2003) and poor appetite disorder (Woolrich et al, 2008). Furthermore, positive and significant relationships between metacognitive beliefs and tools of fuss, anxiety and worry measurement have been reported. One of the other metacognitive beliefs involved in psychological disorders is thoughts fusion. The primary concept of thoughts fusion was first introduced in Bloler works (1916/1934, as quoted from Sheffran and Verachman, 2004) under the name of omnipotence of thoughts and it described beliefs in which patients feared from hurting others with their thoughts. Then, the concept of thought-action thoughts fusion was introduced by Sheffran, Rachman and Tourdason (1996) with improvement of cognitive infrastructure in excitement disorders etiology. Finally, Wales (2000) presented the three concepts of thoughts fusion in metacognitive model as one of the metacognitive beliefs dimensions involved in creation of anxiety disorders and especially fuss. As defined, thoughts fusion contains e 3 spheres: 1-thought-event fusion, such as: thinking about an event means the event has happened or it will happen, or: bad thoughts result in bad events. 2-thought-object fusion, the belief that intrusive feelings and thoughts are transferred to other objects and are passed to other objects and individuals through polluted objects, such as: objects can become dirty with memories and thoughts, or if objects seem old and used, they have become dirty with other people experience. 3- thought-action fusion, which is referred to considering thoughts and actions as the same; such as: if I think I will harm someone this means I will do it. As a result of such a way of thinking, the individual cannot test the beliefs and reject their validity; therefore his/her thoughts act as the direct tool of reality (Porden and Klark, 2002).

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For example, Rachman and Cheffran (1999) believe that panic-suffering patients may believe that only thinking about their catastrophic worries (like heart attack) increases the possibility of its happening. Several studies showed the influence of action thought obsession in panic patients, social anxiety, stress disorder after accident (Rassin and Merkel Bach, 2001), anxiety disorders towards normal group, RassinDepstraten, Merkel Bach and Morris, 2001), furthermore, positive and significant relationship has been reported between thoughts fusion and fuss symptoms measurement tools (Kohen and Kalamari, 2004, as quoted from Mayers, Fisher and Wales, 2008). Such a relationship was steady at the time of worry control (Walse and Papageorgio, 1998) and non-metacognitive beliefs (J. William, Walse and KartriteHatoun, 2004), Mayers, Fisher and Walse (2008); Walse (2008), Mayers and Walse (2005) as quoted from Mayers, Fisher and Walse (2008).

Worry control is usually experienced with difficulty. This does not mean that worry cannot be controlled easily. Patient and MCT therapist must perceive the nature of probable and non-probable control and feasible and unfeasible solutions. Worry is a slow perception process involving thinking about relatively new events in future and ways of dealing with them. Worry is easily removed by feedback from internal or external resources. Strategic self-conscious nature of worry must have the meaning that worry can be solved up to high levels of voluntary control even if knowledge about such a control is low or even if it does not exist. Differentiation between intrusivethoughts which may be involuntary and act as worry triggers and perceived nature of worry is a response to reduction or stopping of MCT intrusive thoughts. Answer to intrusive thoughts is one of the goals in treatment of thought based on experienced perception (based on worry). This is a type of control which is aimed by patient and therapist and not a control or suppression of intrusive thoughts which cause worry. In addition, control of experienced change is used as a tool for challenging MCT or worry in metacognitive beliefs.

Metacognitive control strategies are responses shown by individuals in order to control cognitive system activities. These strategies may increase or decrease thinking strategies and contribute to increasing supervision processes. In everyday life, individuals use strategies like using memory aids for decryptions' (like memory aids or mental review of memorized items) and remembering strategies like signaling. In clinical disorders, control strategies usually include attempts at controlling consciousness flow. In anxiety disorders which mental events usually are paraphrased as signs of nervous breakdown, individuals may try to prevent from some thoughts or think in a way to prevent from catastrophe (Reinolds and Wales, 1999). According to what was said up to now, the main goal of the present research is to determine relationship between thoughts fusion and its components and worry with eating disorders in women.

## Text

### Results of research statistical analysis

Table 1: mean, standard deviation, minimum and maximum of the points of the sample age distribution variable

variable	mean	Standard deviation	Minimum point	Maximum point
Age distribution	20.94	4.33	18	46

As it can be observed in table 1, age mean of sample is 20.94. in the following sentences, 3-D circle graph of age is presented without consideration of missing values:

Table 2: mean, standard deviation, and Pearson correlation coefficient between thoughts fusion and its components, worry and eating disorders

variables	mean	SD	Pearson correlation	significance
<b>Total thoughts fusion</b>	461.59	246.90	0.234	0.001
<b>Thought-action fusion</b>	155.99	108.39	0.235	0.001
<b>Thought-event fusion</b>	206.39	116.56	0.234	0.001
<b>Thought-object fusion</b>	99.21	87.51	0.06	0.40
<b>worry</b>	59.29	14.88	0.234	0.001
<b>Eating disorders</b>	<b>81.02</b>	<b>15.72</b>	<b>1</b>	-

Table 2 shows that total thoughts fusion, thought-action fusion and thought-event fusion have positive and significant relationship with eating disorders ( $P < 0.01$ ) and this relationship is significant in  $\alpha = 0.001$  and 99% certainty level. In other words, an increase in using these strategies increases beliefs concerning eating disorders. But no significant relationship was achieved between eating disorder and thought-object fusion ( $P > 0.05$ ).

Furthermore, Pearson correlation coefficient showed that there is positive and significant relationship between worry and eating disorder ( $P < 0.01$ ) and this relationship is significant in  $\alpha = 0.001$  and certainty level equal to 0.99.

Table 3: step-by-step multi-variate regression, prediction of eating disorder out of thoughts fusion and worry

		R2	B	S.E	beta	T	Sig
1 <sup>st</sup> step	Constant value	-	96.09	4.47	-	21.48	0.001
	worry	0.05	0.25	0.07	0.24	3.50	0.001
Second step	Constant value	-	98.91	4.50	-	21.95	0.001
	worry	0.05	0.21	0.07	0.20	2.87	0.001
	Thought-event fusion	0.08	0.026	0.009	0.19	2.83	0.001

Multi-variate step-by-step regression was used to predict relationship between components of thoughts fusion and worry on eating disorder. Results show that worry and thought-event fusion is the strongest predictors of eating disorders. In other words, worry variable was introduced to the equation in the first step and it predicts 0.05 of changes in eating disorders. In the second step, thought-event fusion variable was inserted into the model and they predicted totally 8% of the variance of eating disorder.

Beta standard coefficients and non-standard regression B have also been presented in the table and they show that if worry changes one standard deviation, eating disorder changes 0.20 standard deviation and if thought-event fusion changes one standard deviation, eating disorder changes 0.19 standard deviation.

Table 4: Anova test (F), investigation of linearity of regression model

steps	model	Sum of squares	Degree of freedom	Mean of squares	significance
First step	Regression value	2850.22	1	2850.22	12 0.001
	remainder	45260.53	195	232.10	
	total	48110.76	196	-	
Second step	Regression values	4645.46	2	2322.73	10 0.001
	remainder	43465.30	194	224.40	
	Total	48110.76	196	-	

Furthermore, results of Anova table show that F coefficient is equal to 12.28 for the first step and it is equal to 10.36 for the second step and in both cases, regression equation is significant in 0.01 level. Therefore, the regression equation is linear and significant.

### Conclusion

Results of pearson correlation coefficient showed that there is positive and significant relationship between thoughts fusion ( $r=0.27$ ) and all its components except for thought-object fusion and eating disorder in  $\alpha=0.001$  level. In other words, an increase in thoughts fusion increases negative attitudes towards eating and vice versa. Step-by-step multi-variate regression was used to predict eating disorders through thoughts fusion components and worry. Results showed that worry and thought-event fusion is the strongest predictors of eating disorders, respectively. In other words, worry variable was introduced to the equation in the first step and it predicts 0.05 of changes in eating disorders. In the second step, thought-event fusion variable was inserted into the model and they predicted totally 8% of the variance of eating disorder. Many studies have verified the results of the present research which showed that positive and negative beliefs were the strongest predictors of eating. Matthews, daytold and Dirsels (2006) investigated relationship between metacognitive beliefs and fuss symptoms in normal adolescents. Results showed that there is positive and significant correlation between metacognitive beliefs and fuss symptoms. Shirinzadeh, Goudarzi, Ghanizadeh and Taghavi (2008) investigated the role of metacognitive beliefs and responsiveness in obsessive-compulsory disorder in case of worry control. Results showed no significant difference.

As a result of activation of metacognitive beliefs in thoughts meanings, obsessive thoughts are regarded as threatening for an individual. These beliefs can include the three components of (TOF). Activation of these metacognitive beliefs result in its evaluation by the patient and the intrusive thought is considered as dangerous and finally results in anxiety and sinfulness feeling and worry.

As it was mentioned, only thought-event and thought-action dimensions of thoughts fusion have relationship with eating disorders and thought-event can predict the dependent variable with a stronger beta. It can be commented on thought-action that attack of intrusive thoughts to an individual's mind results in confusion and eating disorders. For example, the individual thinks of a fatty and full-calorie food as a nice food. The same is true for event-thought obsession. According to definitions, the border between reality and thoughts are eliminated in thoughts fusion; therefore, an intrusive thought like imagination of becoming fat is as stressful

as becoming fat in reality. Following such a thought, the individual becomes confused and tries to reduce the results of this thought. This is while such thoughts are temporary in a normal mind and a normal person does not try to remove this thought.

However, thought-object component did not yield a significant relationship with eating disorders. This may be attributed to measurement error or the fact that thoughts fusion concept was first propounded in relation to fuss investigation. Next studies also verified that fussy individuals had the greatest share of thoughts fusion and thought-object fusion specifically related to fuss (Fisher and Walse, 2005, as quoted from Mayers, 2008). Since eating disorders have high correlations with fuss disorder, it is acceptable that patients suffer from the presence of such beliefs.

Vastar Switch (2005), as quoted from Mayers et al (2008), investigated thoughts fusion texts and stated that this phenomenon is not specific to fuss and it is also common in some other disorders, although its value in fuss are more than other disorders. It has been verified that thoughts fusion has significant relationship with depression and it might influence on patients who suffer from eating disorders. Furthermore, thoughts fusion has relationship with psychological disorders of children and teenagers. Li et al (1998) conducted a research titled "relationship between thoughts fusion and Schizotypic characteristics" and showed that schizotypic magic thought and fuss symptoms have significant relationship with thoughts fusion in terms of occurrence probability (meaning: if I think about an event, the possibility of its happening increases) and this relationship remains after control of fuss symptoms, generalized anxiety and depression. Koolz, Manin and Himberg (2001) showed that thoughts fusion can be very important in differentiation between fuss and worry aspects. They also showed that thoughts fusion has strong relationship with fuss aspects (compared with worry). Khorram Del, Rabiee, Molavi and NeshatDoost (2008) also showed that there is relationship between fuss and thoughts fusion. Khorramdel and barahmand (2010) investigated thoughts fusion among individuals suffering from fear and thought-action fuss and compared it with normal individuals and found that fussy group has higher points in these three components. Furthermore, they found that object-thought component of TOF is more in fussy patients. Omel Kamp and Ardma (1999) showed that thought-action thoughts fusion is a good predictor for investigation of compulsory behavior.

According to metacognitive model prediction, metacognitive beliefs dimensions have significant correlation with excitement vulnerability level and are related to structures like self-consciousness and cognitive failure. These dimensions consider real dimensions and do not emphasize on unreal characteristics (Walse, 2000). Therefore, positive beliefs in worry and negative beliefs in cognition (like lack of control and negative outcomes of thoughts) and (continuous use of negative strategies (like worry or rumination) have harmful influences on cognition and self-regulation method).

Theorists believe that psychological metacognitive disorders are accompanied by beliefs that can combine negative information with metacognitive beliefs and these results in worry, rumination and cognitive biases. The first is that in most cases, a set of positive beliefs in worry exists; for example, I must be worried to behave in a more organized way and the individual thinks he/she must be worried for a long time. Second set of beliefs are beliefs concerning destructive worry. Beliefs such as "worry can make me mad" involve the individual in a series of behavioral responses like avoiding worry triggers and reassurance seeking. These behaviors prevent the individual from controlling his/her worries, especially harmless worries. According to the presence of depression and anxiety traces in patients suffering from eating disorders we can say that such a patient has confused thoughts about his appearance and weight and others' opinion about him. Furthermore, when a patient who suffers from eating disorders is directed by worry, he/she thinks about his/her appearance and weight. These thoughts make the individual take actions concerning slimness like eating less, using laxatives, going on diet. Such actions facilitate defective thoughts formation and disorder stability through worry. It is recommended to future researchers to consider factors like monitoring and thoughts endowment which are among metacognition factors in investigation of eating disorders. Furthermore, relationship between eating beliefs and other dimensions related to eating disorders like excellence and bad shape of body can be investigated.

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