Indian Journal of Fundamental and Applied Life Sciences ISSN: 2231– 6345 (Online)
An Open Access, Online International Journal Available at www.cibtech.org/sp.ed/jls/2015/03/jls.htm
2015 Vol. 5 (S3), pp. 1143-1148/Siavoshifar and Mousazadeh
Research Article

COMPARE METACOGNITIVE BELIEFS AND THOUGHT CONTROL STRATEGIES AND STYLES OF DOCUMENTS AMONG DIABETIC PATIENTS AND HEALTHY

Nasim Siavoshifar and *Tavakol Mousazadeh
Department of Clinical Psychology, Ardabil Branch, Islamic Azad University, Ardabil, Iran
**Author for Correspondence*

ABSTRACT
The aim of this study is to compare metacognitive beliefs and thought control strategies and attribution styles among diabetic patients and healthy subjects. The study population included all patients referred to specialized hospitals and clinics in Ardabil in the first half of 2015. It is a causal-comparative research and sampling is in available method. This means that in the first stage from diabetic patients referred to hospitals and specialized clinics of Ardabil, 35 persons and 35 persons were selected from healthy people. To collect the data, attribution style questionnaires (ASQ), metacognition questionnaire (MCQ) and thought control questionnaire were used in this study. Manoa test was used to examine the hypotheses. Results showed that among the components of MCT beliefs between two groups of diabetic patients and healthy subjects, there was no significant difference (p>0/05) and the mean scores of positive beliefs about worry, uncontrollability and danger, cognitive ensuring and the need to control thoughts among diabetic patients is more than in healthy samples; and not only there is difference between the two groups in terms of cognitive self-consciousness. It can be concluded that diabetic patients need for training to enhance their MTC beliefs.

Keywords: *Metacognition (MTC), Thought Control, Attribution Styles, Diabetics*

INTRODUCTION
Problem Statement
Diabetes is a common and important disease that affects people of all ages (Amir, 1997) and its complications are a major cause of mortality and morbidity (Weiner, 1986). Diabetes is a common chronic disease that can affect physical performance, development of complications, mental status, and individual, family and community relations, and understanding of health and sexual function (Shirinzadeh, 2008). According to the World Health Organization over the next 25 years the number of people with diabetes will be double, so that 171 million in 2000 would reach to 366 million in 2030. Iranian Diabetes Association has estimated diabetes statistics in 2009 amounted to 2 million 700 thousand persons in the age group 15 to 65 and three million people are suffering from impaired glucose tolerance, which unfortunately are unaware of their disease.

Iran with prevalence of 8% is among the areas with the highest percentage of diabetes in the world. Diabetes is the ninth leading cause of death in men and the sixth leading cause of death in the United States and Iran about 18% of deaths in people over 25 years (Reynolds and Wells, 1999). In diabetes, the body's speed and ability to use the proper metabolism of glucose is reduced and hence the blood glucose level is increased that it is called hyperglycemia. When the sugar increase is present in the body in the long term microvascular complications of diabetes or damage of tiny blood vessels in the body would be made, which can involve different organs such as the kidneys, eyes and nerves. Diabetes is also associated with an increased risk of cardiovascular disease directly. Therefore, screening and early detection of the disease in high-risk people can prevent the risk of complications. Diagnosis and screening for diabetes with a blood glucose test is possible (Mac *et al.*, 2013).

One of the new fields in psychology metacognition is the subject of psychology metacognition, the scope of the idea of a new Gary, whose history reaches back to the 1970s. Flavell (1979) was the first person who in 1979 proposed the term metacognition. It seems metacognition includes cognitive processes as well as the experiences and cognitive regulation. Metacognitive knowledge refers to the acquisition of knowledge about cognitive processes and knowledge on how to use cognitive control processes.

Metacognition means any kind of knowledge or cognitive process in which there is the assessment, monitoring and cognitive control (Lips *et al.*, 2002). The results of research in this area show that metacognitive strategies affect anxiety of patients with blood pressure (Bakhtiari, 2000).
Thought control strategies for controlling responses that people show for their Meta military activities. Wells and Mathews characterized emotional disorder by threat control strategy (Wells & Matthews, 1994). People use a wide range of strategies to control unwanted thoughts or anxiety-causing. In a factor analysis study, Wells and Davis have identified five control strategies being measured through Thought Control Questionnaire (TCQ). These Re-evaluation strategies include punishment, social control, anxiety and attention diversion (Wells and Davis, 2003). According to the definition of control strategies, we can point out to this that people with diabetes can help their recovery by control of thoughts (positive or negative). People react in different situations show different behaviours and it is related to factors by them that is called attribution operation. Attribution style is the attributing of the causes that the person adopts for his events or his action results and it has personal analytical aspect. Attribution style can be internal or external. This means that someone attributes the result or cause of an action to himself and external factors. Some consider attribution style as a relatively stable personality variable with cognitive base and shows how people explain their life unpleasant events. Unfortunate events happen to everyone, but different people justify them in different ways which are different in terms of the source of stability and controllability (Peterson and Barrett, 1987; Peterson and Park, 1998; Peterson and Seligman, 1984). As well as some other consider styles of attribution as a trait. This group define attribution styles a reluctance to provide explanations about the various events. Peterson *et al.*, (Quoted from Rajabi, Shahni,Yeylaq, 2005) believe that the style of attribution include two types of events: a) positive events and B) negative events. Each of these events has three components: the internal-external attributions, stable-unstable attributions, and general-minor attributions (Weiner, 1985). Seligman is a pioneer in the use of attribution style in mental health that raises two issues in the context of the relationship between attribution style and depression: (1) pessimistic attribution style: the attribution of negative events to internal factors that lead to depression. 2- Optimistic attribution style: that is the attribution of positive events to internal factors; this style underlies happiness. Attribution of negative events to internal factors, stable and general and attribution of positive events to external factors, without stability and specificity, a maladaptive the attribution style, and the maladaptive attributions or in other words, pessimistic attributions are associated with psychological problems. Monde (2013) has introduced general attributions for negative events as the best predictors of physical and mental health of individuals. Seibel (2014) in his study showed that diabetic patients with internal control attributions participate more in the activities of their care (Qandi, 2014). For this reason, people with diabetes can exhibit different attribution styles that lead to increase or decrease the disease. The main question is this: is there a significant difference between MTC beliefs and thought control strategies and attribution styles among diabetics and healthy ones?

MATERIALS AND METHODS

Method

The study is a causal-comparative one and is a post-event one. Because solidarity studies include all studies in which we try to determine or discover the comparison of different variables using a correlation coefficient that in this study comparing the MTC beliefs and thought control strategies and style of attribution are studied between normal and diabetic subjects. This method is often called the post-event method as referring to cases in which the cause is pre-occurred and studying of it is possible through the effect of it on other variables called effect and has remained on the community. Also the study population consisted of all patients admitted to hospitals and specialized clinics of Ardabil in the first half of 2015, which is approximately 420 people. Sampling is an available one because random sampling was difficult and nearly impossible. This means that in the first stage from diabetic patients referred to hospitals and specialized clinics of Ardabil, 35 persons and 35 persons were selected from healthy people. At causal comparative studies minimum of 25 people is suitable. In this study, to increase external validity and generalizability for more confidence 35 people were selected as the sample. Samples were matched in

terms of age and sex. The data collection method in this research is both Library and field methods. Library method was used to collect terms related to history and literature. And in the field method after patient satisfaction a questionnaire was used to collect feedback from patients and 3 separate questionnaires that include MTC Beliefs questionnaire (MCQ) questionnaire of mind control and attribution style questionnaire (ASQ). For data analysis of study, the statistical indicators such as frequency, percentage, average and standard deviation were used and also to check the hypothesis, Manoa test was used.

RESULTS AND DISCUSSION

Results

significance level	DF 2	DF 1	F	Variable
0.844	64	1	0.039	Positive attribution style
0.414	64	1	0.675	Positive internal attributions
0.79	64	1	0.072	Positive stable attributions
0.977	64	1	0.001	Positive general attributions
0.542	64	1	0.376	Negative attribution style
0.2	64	1	1.678	Negative internal attributions
0.829	64	1	0.047	Negative stable attributions
0.7	64	1	0.15	Negative general attributions

As can be seen in Table 1 significant level of test error of variances equality ($p> 0.05$) indicates that the variances are equal, and the assumption of homogeneity of variances was not violated.

Eta square	P	df error	df hypothesis	F	Value	Test name	
0.986	0.000	59	6	6.878	0.986	Pillai's trace	Model
0.986	0.000	59	6	6.878	0.014	Lambda Wilkes	
0.986	0.000	59	6	6.878	69.95	Hotelling effect	
0.986	0.000	59	6	6.878	69.95	The greatest error	
0.057	0.734	59	6	0.594	0.057	Pillai's trace	Group
0.057	0.734	59	6	0.594	0.943	Lambda Wilkes	
0.057	0.734	59	6	0.594	0.06	Hotelling effect	
0.057	0.734	59	6	0.594	0.06	The greatest error	

As Table 2 shows the significance of all tests do not permit the multivariate analysis of variance. The results show that in the studied groups at least in terms of one of the dependent variables, there is no significant difference. (Lambda Wilkes= 0.943 F=0.594; $p>0.05$). Eta square shows the difference between the groups with respect to the dependent variables in the total is not significant, and the rate of this difference based on Wilkes lambda test is 0.057, i.e. 5% of the variance of the difference between groups is caused by the interaction of the dependent variables.

significance level	DF 2	DF 1	F	Variable
0.811	64	1	0.057	Positive beliefs about worry
0.179	64	1	1.848	Uncontrollability and danger
0.759	64	1	0.095	Cognitive confidence
0.28	64	1	1.189	need to control thoughts
0.521	64	1	0.417	Cognitive self-awareness
0.757	64	1	0.096	Overall metacognition

As can be seen in Table 3 significant level of test error of variances equality (p> 0.05) indicates that the variances are equal, and the assumption of homogeneity of variances was not violated.

Eta square	P	df error	df hypothesis	F	Value	Test name	
0.985	0.000	60	5	8.06	0.985	Pillai's trace	Model
0.985	0.000	60	5	8.06	0.015	Lambda Wilkes	
0.985	0.000	60	5	8.06	67.168	Hotelling effect	
0.985	0.000	60	5	8.06	67.168	The greatest error	
0.175	0.037	60	5	2.551	0.175	Pillai's trace	Group
0.175	0.037	60	5	2.551	0.825	Lambda Wilkes	
0.175	0.037	60	5	2.551	0.213	Hotelling effect	
0.175	0.037	60	5	2.551	0.213	The greatest error	

As Table 4 shows the significance of all tests would permit the multivariate analysis of variance. The results show that in the studied groups at least in terms of one of the dependent variables, there is a significant difference (Lambda Wilkes= 0.825 F=2.551; p>0.05). Eta square shows the difference between the groups with respect to the dependent variables in the total is significant, and the rate of this difference based on Wilkes lambda test is 0.037, i.e. 3% of the variance of the difference between groups is caused by the interaction of the dependent variables.

Eta	P	F	Mean squares	Freedom degree	Total squares	Dependent variable	Change source
0.063	0.043	4.277	76.379	1	76.379	Positive beliefs about worry	
0128	0.003	9.39	117.333	1	117.33	Uncontrollability and danger	
0.079	0.023	5.457	62.061	1	62.061	Cognitive confidence	Model
0.108	0.007	7.743	78.545	1	78.545	need to control thoughts	
0.006	0.552	0.358	3.879	1	3.879	Cognitive self-awareness	
0.151	0.001	11.359	1465.47	1	1465.47	Overall metacognition	
0.063	0.043	4.277	76.379	1	76.379	Positive beliefs about worry	
0128	0.003	9.39	117.333	1	117.33	Uncontrollability and danger	
0.079	0.023	5.457	62.061	1	62.061	Cognitive confidence	Group
0.108	0.007	7.743	78.545	1	78.545	need to control thoughts	
0.006	0.552	0.358	3.879	1	3.879	Cognitive self-awareness	
0.151	0.001	11.359	1465.47	1	1465.47	Overall metacognition	
			17.856	64	1142.788	Positive beliefs about worry	
			12.495	64	799.697	Uncontrollability and danger	
			11.373	64	727.879	Cognitive confidence	Error
			10.144	64	649.212	need to control thoughts	
			10.837	64	693.576	Cognitive self-awareness	

As Table 5 shows there is significant difference (p<0/05) between the dimensions of positive beliefs about worry, uncontrollability and danger, cognitive confidence and overall metacognition, need to thoughts control among the two groups of diabetic patients and healthy subjects, and average scores given in diabetic patients is more than healthy samples. And only there is no difference between the two groups in the cognitive self-consciousness dimension.

significance level	DF 2	DF 1	F	Variable
0.891	64	1	0.019	Distractions
0.188	64	1	1.774	Worry
0.724	64	1	0.126	Social Control
0.654	64	1	0.202	Self-punishment
0.668	64	1	0.186	Reassessment

As can be seen in Table 6 significant level of test error of variances equality ($p> 0.05$) indicates that the variances are equal and the assumption of homogeneity of variances was not violated.

Eta square	P	df error	df hypothesis	F	Value	Test name	
0.989	0.000	60	5	1.108	0.989	Pillai's trace	Model
0.989	0.000	60	5	1.108	0.011	Lambda Wilkes	
0.989	0.000	60	5	1.108	92.308	Hotelling effect	
0.989	0.000	60	5	1.108	92.308	The greatest error	
0.113	0.195	60	5	1.527	0.113	Pillai's trace	Group
0.113	0.195	60	5	1.527	0.887	Lambda Wilkes	
0.113	0.195	60	5	1.527	0.127	Hotelling effect	
0.113	0.195	60	5	1.527	0.127	The greatest error	

As Table 7 shows the significance of all tests do not permit the multivariate analysis of variance. The results show that in the studied groups at least in terms of one of the dependent variables, there is no significant difference. (Lambda Wilkes= 0.887 F=1.527; p>0.05).

Conclusion

Chronic diseases such as diabetes have complicated origin, gradual onset and severity and unpredictable recovery that because of the long process, it requires patient participation in his care. Review of research literature on diabetes has shown that good control of diabetes is strongly related to control of thoughts, but this relationship is influenced by psychological factors affecting the performance characteristics of the character, mind control, diabetics can be considered as thought control strategies. The results of this research showed that no significant difference was observed between the strategic components of thought control and elements of attribution style among healthy subjects and diabetic subjects. But a significant difference was observed between the components of metacognitive beliefs in healthy subjects and diabetes subjects; because it can be said that people with diabetes have misconceptions. For example, people with diabetes cannot take chocolate in their life. But in fact, along with a healthy diet and exercise, a diabetic person can use desserts and sweets. However it must be emphasized that the vast majority of patients with type 2 diabetes have a passion for this kind of material and sometimes they say that their bodies require this kind of food. People with diabetes are uncontrollable due to false beliefs. Diabetes control with diet is one of the easy ways to prevent and control the disease progression. Diabetes is from diseases that are directly related to diet. In people with diabetes if a special diet is not followed the disease is aggravated and the effects are irreversible. For this reason, people with diabetes need to learn to control their thoughts and self-awareness of the disease.

REFERENCES

Amir N, Cashman L and Foa EB (1997). Strategies of thought control in obsessive-compulsive disorder. *Behaviour Research and Therapy* **35** 775-77.

Bakhtiari M (2000). Mental disorders in patients with body dysmorphic disorder. MA thesis, clinical psychology, Tehran University of Medical Sciences, Tehran Psychiatric Institute, Tehran, Iran (Persian).

Lobban F, Haddock E, Einderman P and Wells A (2002). The role metacopinitive beliefs auditory hallucination. *Personality and Individual Differences* **32**(6) 1351-1363.

McFarlane Philip, Gilbert Richard E, MacCallum Lori and Senior Peter (2013). Chronic Kidney Disease in Diabetes. *Canadian Journal of Diabetes* **37** S129–S136, doi:10.1016/j.jcjd.2013.01.037. ISSN 1499-2671.

Peterson C and Barrett L (1987). Explanatory style and academic performance among university freshmen. *Journal of Personality and Social Psychology* **53** 603-607.

Peterson C and Park C (1998). Learned helplessness and explanatory style. In: *Advanced Personality*, edited by Barone DF, Hersen M and VanHasselt VB (New York: Plenum) 287-308.

Peterson C and Seligman MEP (1984). Causal explanations as a risk factor for depression. *Psychology Review* **91** 347-374.

Qandi A (2014). Relation of coping with illness and social support with quality of life in patients with diabetes. Unpublished thesis of psychology public, Tallesh PNU.

Rajabi GR, Shani Yeylaq and Manyjeh (2005). The effects of gender and field of study on attribution styles of high school students in Ahwaz and results of psychometric scale. *Humanities and Social Sciences Magazine, Shiraz University* **22**(45).

Reynolds M and Wells A (1999). The Thought Control Questionnaire: psychometric Properties in a clinical sample, and relationship with PTSD and depression. *Psychological Medicine* **29** 1089–1099.

Shirinzade-dastgiri O (2006). Comparison of met cognitive beliefs and responsibility among patients with obsessive- compulsive disorder, generalized anxiety disorder and normal people. Dissertation, Shiraz: Shiraz University [Persian].

Weiner B (1985). An attributional theory of achievement motivation and emotion. *Psychological Review* **92** 548-573.

Wells A and Davies M (2003). The thought control questionnaire: A measure of individual difference in the control of unwanted thought. *Behaviour Research and Therapy* **41** 529-54.

Wells A and Matthews G (1994). *Attention and Emotion: A Clinical Perspective* (Hove, UK: Erlbaum) 21-5.