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COMPARISON BETWEEN PROSPECTIVE MEMORY AND META MEMORY OF NORMAL PEOPLE AND THOSE WITH OBSESSIVE-COMPULSIVE DISORDER

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ABSTRACT

Present study was done with aim of comparing prospective memory and Meta memory of normal people and those with obsessive-compulsive disorder among students of Clinical Psychology field in Psychology Faculty of Karaj Islamic Azad University. This research is fundamental and comparative in the sense of aim and method respectively.

To do this study, first 100 numbers of girl students in B.C. period in Clinical Psychology were chosen in simple random sampling method. Then each of them was asked to answer prospective memory and Maudsley's obsessive-compulsive inventories. After filling of these inventories and according to Maudsley's obsessive-compulsive inventory, participants were divided into two 50-person control and experimental groups. The participants were given Meta memory test individually. Having gathered, data was analyzed statistically and totally surveying correlation between obsession and memory and Meta memory variables showed that memory and meta memory rates increase with rise of obsession. In other words, people who are with higher obsession level, levels of their memory and Meta memory are also higher.

Keywords: Prospective Memory, Meta Memory, Obsessive- Compulsive Disorder

INTRODUCTION

Although memory has very important role in our functions and performances, most of people pay attention to it only when they weaken in their memory functions. A study about memory addresses investigation of these weaknesses and many other aspects of the memory. Authors are to find human's memory function with comparing situations in

which the memory functions correctly and in which it fails in correct function. Since study of memory has developed little, we can predict behavior of each person in special situations. In other words, knowledge obtained about memory enable us to predict general memory in many different situations (Neath, 1998).

Early real theorists of memory were Plato (1928- 2006) and Aristotle (1904-1929). Plato believed all fundamental realities are saved in the memory and learning is process of remembering these realities. Aristotle compared the memory with a wax plate on which memories form like figures on the wax plate. Memory strength depends on longevity and hardness of this wax and its figure depth. Aristotle viewed the memory as ability to keep and the remembrance as ability to learn. Remembering is based on associations and each association is simple link between two mental events (ideas, thoughts, believes and memories).

Memory includes processes with which information will be coded, saved and recovered. It is product of ability to save information, experiences and using them in subsequent interaction of the person and the environment. Psychologists often know the memory as knowledge saved in mind or information saving warehouse in the mind. The memory is a very important cognitive ability because it forms cognitive base of human's learning. We as humans did not have ability to take advantage and use of experiences for future application without having cognitive and mental tools for saving past representations. In fact the memory provides possibility of perceptual dominance and allows us to use past experiences in present time. There are several classifications in the memory area: studying Norman's series (1970), Tulving (1990) could account a list of 25 kinds of memory. In recent years, several new syntheses as implicit memory (hidden or revealed), flashbulb memory, everyday memory, constructive memory, prospective memory, retrospective memory and Meta memory have been added to this classification.

Obsessive- compulsive disorder (OCD) is disabling disorder that is recognized by painful thoughts (obsession) and behaviors for discomfort reduction (compulsive action) (American Psychiatric Association, 2000). Generally, obsession is a word or image that attacks human's consciousness in spite of his will (Dadsetan, 2008). Main feature of obsessive- compulsive disorder is presence of repeated and so severe obsessions and compulsions that brings significant suffering for the person. These obsession and

compulsion cause waste of time and significant disorder in usual and natural process of life, occupational function, usual social activities or the person' relations (Kaplan, Sadock, 2007).

Among factors influencing information variability are emotional ones because many of cognitive processes as attention, learning, memory, judgment and interpretation are influenced by emotional moods, of emotional factors we can refer to anxiety and inflexibility which are clinical symptoms of obsession and can express weak cognitive processing of these patients such that some of obsessive patients have much time delay in answering duties related to measuring executive functions (Gehring et al., 200; quoted by Molayee and Moradi, 2007).

Based on cognitive nature of obsessive-compulsive disorder, deficit and bias of memory are proposed as key and important aspect of pathogenesis related to this disorder. It is assumed that disturbing and resistant thoughts of these patients become problem when these people have problem in Suppression or inhibition of thought as this event is reviewed in the memory (Purdon, 1999).

Deficit of prospective memory in people with obsessive- compulsive disorder, suggests unwanted doubts of these people that make them to check again. Prospective memory is an aspect of the memory that refers to remembrance of doing an action with previous intention (Wingrad, 1998).

This memory does not happen suddenly and directly base on an external stimulus. For example, we remind consciously and regularly in our minds that call someone though there is not external request for its remembrance (Einstein and Daniel, 2005).

Deficit in prospective and retrospective memory causes and keeps tendency for compulsive investigations. People with compulsive investigations experience failure of prospective memory. This failure disturbs confidence in prospective memory (Goleij, 2011). Obsessive doubts may focus on past and or future life. Obsessing doubt related to past leads to its permanent recreation and the persons' question of himself about correctness of past activities and their consequences forms his main concern. Uncertainty about future also disturbs life process for the person is deprived of ability to make decision (Dadsetan, 2009).

Researches in Meta cognition area have shown that this area and many of cognition dimensions including memory, attention, communications, problem solving and intelligence have great contribution (Moses and Baird, 1999). Meta cognitive knowledge

relates to memory is called Meta memory (Flavell, 1988) and including knowledge about memory (Metcalfe, 2000). Meta memory is referred to a person's knowledge about process, function, evolution, application and capacity of human's memory system generally and the memory itself specifically (Yoosefee Lovieh, 2003).

Meta memory deficit is general feature in people with obsessive-compulsive disorder. People with compulsive checking have annoying and unwanted uncertainties which result in their failure in proper and correct doing of their duties. They concern if they make mistake in doing their duties, they hurt himself or others or something happens, then they feel compulsion to be sure that they have done their duties correctly (Muler and Robertz, 2003).

Based on done studied, one of problems for patients with checking obsession is confidence in memory. Patients affected by checking obsession disorder suffer from a low confidence mood relative to their own memory which decreases with high responsibility (Mc Donald and Dovi, 2005). This matter is proposed in the form of Rachman's theory (2002) that patients with obsession suffer from a Meta memory problem of remembrances having main role in representing this disease (Chelbianloo *et al*., 2010)

METHODOLOGY

Present study is fundamental in aim and comparative according to method which was done to investigate and compare prospective and meta memories of people with obsessive-compulsive disorder and normal people in nonclinical population. It is descriptive of correlation model kind in method of gathering data.

Statistical universe of this study was B.C. girl students in psychology field of Psychology Faculty in Karaj Islamic Azad University. Sampling method was this: Maudzley's obsession inventory was distributed among 200 students and 50 persons having higher score than the rest were chosen as obsession sample and 50 people not having obsession were elected as control sample. Tools used in this research were prospective memory questionnaire, Maudzley's obsessive-compulsive inventory and Meta memory test.

Data analysis method

Central tendency indices like mean and dispersion like variance and standard deviation in descriptive statistic part and Spearman's correlation test and t-test of independent groups in inferential statistics were used.

RESULTS AND FINDINGS OF THE RESEARCH

Meta memories of normal people and people with obsessive- compulsive disorder are different.

Independent t-test was used for testing of this hypothesis. Results of table1 suggest independent t-test comparative test for comparison of mean of Meta memory in normal people and those with obsessive-compulsive disorder. Obtained t value equals 2.84 which is lower than 0.05 in significance level ($p<0.05$). The results show that there is statistically significant different between mean of Meta memory in normal and obsessive- compulsive people ($p<0.05$). As a result, difference of Meta memory among normal and obsessive- compulsive people is supported.

Short term prospective memories of normal and obsessive- compulsive people are different.

The results of table 1 represent independent t-test comparative test for comparison of mean of short term prospective memory in normal people and those with obsessive- compulsive disorder. Obtained t-value equals 2.13 which is lower than 0.05 in significance level ($p<0.05$). The results show that there is statistically significant different between mean of short term prospective memory in normal and obsessive- compulsive people ($p<0.05$). As a result, difference of short term prospective memory among normal and obsessive- compulsive people is supported.

Long term prospective memories of normal and obsessive- compulsive people are different.

The results of table 1 are expressive of independent t-test comparative test for comparison of mean of long term prospective memory in normal people and those with obsessive- compulsive disorder. Obtained t-value equals 2.43 which is lower than 0.05 in significance level ($p<0.05$). The results show that there is statistically significant different between mean of long term prospective memory in normal and obsessive- compulsive people ($p<0.05$). As a result, difference of long term prospective memory among normal and obsessive- compulsive people is supported.

Short term retrospective memories of normal and obsessive- compulsive people are different.

In table 1, results of independent t-test for comparison of mean of short term retrospective memory in normal people and those with obsessive- compulsive disorder have been reported. Obtained t-value equals

2.28 which is lower than 0.05 in significance level (p<0.05). The results show that there is statistically significant different between mean of short term retrospective memory in normal and obsessive- compulsive people (p<0.05). As a result, difference of short term retrospective memory among normal and obsessive- compulsive people is supported.

Long term retrospective memories of normal and obsessive- compulsive people are different.

In table 1, results of independent t-test for comparison of mean of long term retrospective memory in normal people and those with obsessive- compulsive disorder have been reported. Obtained t-value equals 2.79which is lower than 0.05 in significance level (p<0.05). The results show that there is statistically significant different between mean of long term retrospective memory in normal and obsessive- compulsive people (p<0.05). As a result, difference of long term retrospective memory among normal and obsessive- compulsive people is supported.

Table 1: Independent t-test

	Groups	Mean	Standard deviation	Mean difference	t-value	Significance level (p-value)
Meta memory	**Obsessive-compulsive**	13.93	4.71	2.89	2.84	./004
	normal	11.04	4.33			
Prospective memory- short term	**Obsessive-compulsive**	3.37	./43	./35	2.13	./039
	normal	3.02	./59			
Prospective memory- long term	**Obsessive-compulsive**	2.98	./42	./49	2.43	./019
	normal	2.49	./38			
Retrospective memory- short term	**Obsessive-compulsive**	3.14	./77	./40	2.28	./030
	normal	2.74	./74			
Retrospective memory- long term	**Obsessive-compulsive**	3.70	./55	./60	2.79	./006
	normal	3.10	./71			

DISCUSSION AND CONCLUSION

Result of the test showed that meta memory capacity in obsessive and non-obsessive people is significantly different (p<0.05). Meta memory capacity in obsessive sample equals 13.93 and it is 11.04 for non-obsessive sample and these figures show that Meta memory capacity in obsessive people is

significantly higher than non-obsessive ones. These results represent first hypothesis of the research is supported (comparing our research finding with results of similar researches and also with existing and related theories).

Result of the test showed that capacity of short term prospective memory in obsessive and non-obsessive people is significantly different ($p<0.05$). Comparison of mean of short term prospective memory showed that mean of short term prospective memory in obsessive people equals 3.37 and it is 3.02 for non-obsessive cases and these figures show that capacity of short term prospective memory in obsessive people is significantly higher than non-obsessive ones. These results represent second hypothesis of the research is supported.

Result of the test showed that capacity of long term prospective memory in obsessive and non-obsessive people is significantly different ($p<0.05$). Capacity of long term prospective memory in obsessive people equals 2.98 and it is 2.49 for non-obsessive cases and these figures show that capacity of long term prospective memory in obsessive people is significantly higher than non-obsessive ones. These results represent third hypothesis of the research is supported.

Result of the test showed that capacity of short term retrospective memory in obsessive and non-obsessive people is significantly different ($p<0.05$). Comparing mean of short term retrospective memory showed that mean of short term retrospective memory in obsessive people equals 3.14 and it is 2.74 for non-obsessive cases and these figures show that capacity of short term retrospective memory in obsessive people is significantly higher than non-obsessive ones. These results represent forth hypothesis of the research is supported.

Result of the test showed that capacity of long term retrospective memory in Obsessive and non-obsessive people is significantly different ($p<0.05$). Comparing mean of long term retrospective memory showed that mean of long term retrospective memory in obsessive people equals 3.70 and it is 3.10 for non-obsessive cases and these figures show that capacity of long term retrospective memory in obsessive people is significantly higher than non-obsessive ones. These results represent third hypothesis of the research is supported.

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