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# The Comparative of Emotion Regulation skills among the Elder adult Stricken with Alzheimer's disease and the Normal Elders

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**Abstract:** The study aimed to compare emotion regulation skills among elder adults stricken with Alzheimer's disease and normal elders. In this cross-sectional study, which was of causal-comparative type, the researchers visited the Iran Alzheimer Association and randomly chose 19 elder adults stricken with Alzheimer's disease aged 60 years or older and 19 normal elders matched by the elder adults stricken with Alzheimer's disease. The mentioned two groups were tested using Mini Mental Status Examination.

A Difficulty in Emotion Regulation Scale (Gratz and Roemer, 2004) was used to examine the emotion regulation. Regarding the hypothesis testing, based on comparison between emotional self-regulation among elder adults stricken with Alzheimer's disease and normal elders, the results of one-way ANOVA test indicated that these two groups were completely different in terms of emotional self-regulation. Accordingly, the elder adults stricken with Alzheimer's disease had more difficulty than normal elders in regulating their emotions. Regarding the variables of the difficulties in emotion regulation, lack of emotional awareness ( $P < 0.05$ ) and lack of emotional clarity ( $P < 0.01$ ) were higher in elder adults stricken with Alzheimer's disease compared to normal elders. However, there was no significant difference between the two groups in terms of other variables ( $P > 0.05$ ).

**Keywords:** the elder, Alzheimer's disease, the emotion regulation skills.

## Introduction:

The elderly is the process of natural development, evolution of development and the humane evolution. The elderly is a stage in which the negative and positive aspects of life set parallel to each other provided that we can emphasize on the positive aspects of this stage, and in lieu reduce its negative aspects, the elderly period will become optimized (Ahadi and Jomahri, 2007). According to the definition by WHO (2010), the people over 60 years old are called the elder (Shamsi Poor, 2010). At the present, about 14% of the world total population age 60 years old and above, and, until 2015 it will amount to 19% (United Nations Organization, the report on the world population Elderly, 2013).

According to the report on the population elderly in Iran (2013), at the present time the people aged above 60 years old include 8.1% of the total population. The annual population growth rate in Iran is less than 1.7%; while, this amounts to 4.3% for the elder aged between 60 to 65 years old.

Although most of the elder do not show cognitive disorders, but these problems more than other clients affects the elder (Zarit and Zarit, 1998 quoted from Shamsi Poor, 2010); in addition, some studies, also, confirm the small loss of cognitive performances among the healthy elder (Park, Ekonel and Thompson, 2003). The World Health organization (2014) has declared that 25% to 30% of the people aged above 85 years old suffer from cognitive problems to some extent (North Country Health Services (NCHS), 2004, quoted from Forooghan, 2008).

Alzheimer's disease symptoms include loss of memory, ability of judgment, and reasoning, and the changes of modes and behavior, the decrease of cognitive ability, the memory disorders, the sleeping disorders, and the changes of personality and trait (Akbari, Kamrani, 2009). Generally, the patients adults stricken with Alzheimer's disease face 3 different phases of the disease: moderate, medium, and severe. On the moderate phase, the patient suffers from sporadic amnesia and sometimes is incapable of

daily orienting himself. Also, the afflicted person may seclude from the society to an extent and be in the need of help from the others. On the severe phase, the patient may become incapable of talking or even walking. The course of the disease, sometimes, takes between 6 to 20 years (Ahadi, Jomahri, 2007).

In addition to cognitive disorders, over the oldness increase due to the disorders afflicting the different somatic systems of the elder, it leads in the dynamic restrictions and the individual dependency on the other people to carry out the daily tasks; which, these variables can have a negative influence on the usability feeling and, consequently, on the life quality of the elder

One of the factors influential on amenity and life quality of the individuals, in particular the elder, is the emotion regulation. Yoo, Matsumoto and Leroux (2006) consider the emotion regulation as the most important factor of positive adaptation prognosis. In the evaluations, the ability to positively adapt to the circumstances and the ability to regulate emotions on the occurrence of conflicts and pressures are considered the most important types of adaptations (Vanouden hoven, 2006 quoted from EissahZadegan and et al, 2010). Most scholars express the emotion regulation as a key and determinant factor of the psychological welfare and the efficient functionality (Garnefski, 2006; Gross, 1999; Tompson, 1994).

One of the crucial subjects in the evaluation of the emotion entity in the elder is to consider these individuals' experimental performance about their feelings and emotions in regulating emotions during their previous experiments. Allard and Kesinger (2014) in their studies on two groups of young and elder individuals have shown that the elder are more apt to effectively use guidelines of cognitive-regulatory emotions in comparison to the youth (Ebner and Fischer, 2014).

The elder aged above 60 years old less experience negative emotions in comparison to the youth (individuals aged between 18 and 30 years old) (Lowton and et al, 1999). And, the ability to regulate emotions among the elder will be kept or even more increase due to the presence of wisdom and experience (Kunzman, Kupperbusch, 2005; Gross and et al, 1997).

The studies have shown that mood and sentiment changes are popular with the patient with cognitive disorders and the patients adults stricken with Alzheimer's disease (Kromer, Miller and Rankin, 2013). Many nurses and doctors have reported the emotion and feeling variations in the elder adults stricken with Alzheimer's disease. But, the precise evaluation and description of mood variations among the elder adults stricken with Alzheimer's disease has not received much attention (Levenson and et al, 2007 quoted from Goodkind et al, 2010).

The rapid growth in the population of elder at one side, and the low mobility and mechanized life style and the physical, sentimental and emotive problems from other side augment their problems, in particular the cognitive problems of the elderly period and affect their life quality. So, it is necessary to do just actions to advance and improve the health level of these important social strata.

For this reasons, this study, assuming that emotion regulation skills on the life period and the elderly period lead in the occurrence of cognitive problems, in particular Alzheimer's disease, made a comparison between the emotion regulative skills among the elder adults stricken with Alzheimer's disease and the healthy elder and one following research hypotheses have been tested:

- The extent of emotion self-regulation among the elder adults stricken with Alzheimer's disease is different from that for the healthy elder.

### **The study Methodology**

This study is of quantitative and causative nature. Then, it employs two populations of study and control groups. The studied population includes the elder men and women adults stricken with Alzheimer's disease who are members of Iran Alzheimer society aging in the range of 60 years old to 85 years old, who are in the moderate to middle phases of the disorder and they have been with the disorder at least for 6 months and at most for 12 months. All the patients participating in the study were taking Revastigmine (3 ml per gram) drug which is under the commercial name of Exelon. And, by the specialist Neurologist the acute diagnosis of their illness was filed by using blood testing, and MRI studies. Using the Mini-Mental state Examination (MMSE) test, the cognitive ability levels of the patients were tested and the patients who scored 17 or above were considered as the patients with moderate Alzheimer's disease. In the control group, there were healthy elder from the Elder Rehabilitation Centers in Tehran city, who aged in the range of 60 to 85 years old; and, according to the doctors, psychologists and the available documents of their files in these centers, they had no cognitive problems and they scored above 27 on the cognition test. After conducting a primary study on 30 healthy elder (aged above 60 years old), and 30 elder adults stricken with Alzheimer's disease, assuming that the variation in the two groups are equal and considering that the test power was 90% with 95% reliability level, a sample volume of 19 healthy elder and 19 elder adults stricken with Alzheimer's disease was chosen accordingly.

### **The Procedure of Implementation**

After the submission of the introduction letter from the University to the Alzheimer's society and ratification of the realization letter by this society, the sample were selected among the files of Alzheimer's society at simple randomness. Each file was ascribed a code; considering the necessary requirements for the entry and exit of the samples in the study, those patients satisfying the necessary requirements of the study research were kept and the rest were excluded.

The necessary requirements to enter the study were as the following:

- 1- The age should be in the range of 60 to 85 years old for both groups.
- 2- The minimum literacy level of reading and writing.
- 3- The diagnosis of moderate to medium Alzheimer's disease for the group of patients by using MMSE test (scores should be 17 or above).
- 4- The absence of memory and cognition difficulty in the group of healthy elder by using MMSE test (the scores should be 27 or above).
- 5- Taking identical drugs in the group of the elder adults stricken with Alzheimer's disease.
- 6- In the group of the elder adults stricken with Alzheimer's disease, it should be at least 6 months past since the outbreak of their disorder affliction.
- 7- The gradual initiation of the disease in the group of the elder adults stricken with Alzheimer's disease.

#### **The standards to exit from the study:**

- 1- Psychosis affliction in both study groups.
- 2- The presence of major depression in the individuals' history records, who are under study.
- 3- The presence of any kind of neurologic disease or neurotic loss.
- 4- The presence of visual or audial problems.

Also, the sample of the healthy elder were selected by receiving written permission from the Organization of Welfare in Tehran province by attending the center of Elder Rehabilitation in Tehran Zone 5 according to the entry and exit standards; and the questioners were applied on them. It is noteworthy to mention that participating in the study was dependent on the consent of the patients and their attendants, and the consent of the healthy elder; so that no testee was forced to participate in the research. Also, the testees were assured that their personal information would be kept secret.

In executing each questioner, for the individuals adults stricken with Alzheimer's disease a time of 45 minutes to 1 hour was allocated; and, on most occasions the questioners were completed during two or three sections, because of the testees' boredom or reluctance in cooperation. Finally, the gathered data were statistically analyzed.

#### **The Study Instruments:**

In the present study, to evaluate the cognitive status the Mini-Mental state Examination (MMSE) test was employed, and to evaluate the difficulty of emotion regulation the Difficulties Emotion Regulation Scale (DERS) was used. These tools are described in the following lines:

##### **a) Difficulties Emotion Regulation Scale (DERS)**

This is a self-reporting scale which has been developed to evaluate the available difficulties in the emotion regulation more comprehensively than the available tools. It includes 36 statements and 6 sub-scales; the sub-scales are:

- 1- The rejection of emotion responses
  - 2) difficulties of conducting purposeful behavior
  - 3) difficulties of controlling impulses
  - 4) the lack of emotion awareness
  - 5) limited access to emotion regulation guidelines
  - 6) the lack of emotion clearance.
- Also, for the justifiability matter, the evaluations indicate the justified construct and they show enough predictions for this scale (Gratz and Romer, 2004 quoted from Alavi, 2010). The results for the perpetuity evaluation show that this scale benefits from high intrinsic parallelism for the original version ( $\alpha=0.93$ ) and this amounts to ( $\alpha=0.86$ ) for the normalized Iranian version (Alavi, 2009).

##### **b) The Mini-Mental State Examination (MMSE) Test**

The Mini-Mental State Examination test is a recognized and summarized test which examines most of the cognitive areas generally. This test examines at least six areas of the individuals' cognitive areas. These areas are: self-orientation in time and place, recording new information, 3 dimensional skills, oral linguistic performance, concentration, and memory. The scores between 20-24 indicate moderate Alzheimer's disease affliction and the scores between 12-19 show medium Alzheimer's disease afflictions; and, the score below 12 are regarded as severe Alzheimer's disease affliction (Akbari Kamrani, 2005).

#### **The Findings:**

In this study, the descriptive statistical methods including mean scores, the standard deviation, and the slopes, elongation and drawing of graphs are employed to describe the study variables; also, the deductive statistical method including one-way Variation Analysis is used to compare the emotion skills in two groups of the healthy elder and the elder adults strickenwith Alzheimer's disease.

Table1- the separate descriptive variables of the difficulties of emotion regulation and the results of variation analysis test on the evaluation of discrepancies between groups

<b>variables</b>	<b>Groups</b>	<b>mean scores</b>	<b>deviation</b>	<b>Error of standard deviation</b>	<b>F value</b>	<b>The level of significance</b>
The emotion acceptance difficulty	Healthy	10.68	3.19	0.73	1.69	0.202
	Alzheimer stricken	12.05	3.29	0.75		
	Total	11.37	3.27	0.53		
The purposeful behavior difficulty	Healthy	12.31	4.75	0.47	0.944	0.338
	Alzheimer stricken	14	4.43	0.44		
	Total	13.16	4.61	0.32		
Impulse control difficulty	Healthy	14.28	6.10	0.43	0.13	0.72
	Alzheimer stricken	13.63	4.75	0.09		
	Total	13.94	5.38	0.88		
The lack of emotion awareness	Healthy	15.37	3.89	0.89	5.21	0.03
	Alzheimer stricken	17.94	2.85	0.67		
	Total	16.62	3.62	0.59		
The difficulty of accessibility to guidelines	Healthy	18.10	6.30	0.45	3.009	0.09
	Alzheimer stricken	21.36	5.24	0.20		
	Total	19.73	5.95	0.96		
The lack emotion clearance	Healthy	9	3.39	0.78	43.39	0.000
	Alzheimer stricken	15.73	2.88	0.66		
	Total	12.37	4.61	0.75		
Emotion self-regulation difficulty	Healthy	78.94	21.85	5.15	6.95	0.013
	Alzheimer stricken	94.66	12.76	3.007		
	Total	86.80	19.35	3.22		

The examination of each single variable of emotion regulation in the two studied groups showed that: The variables of emotion acceptance difficulty, the purposeful behavior difficulty, the impulses control difficulty, and the difficulty of accessibility to emotion regulation guidelines showed no significant difference ( $p>0.05$ ) in the healthy elder and the elder adults strickenwith Alzheimer's disease.

But, the two groups of elder showed difference ( $p < 0.05$ ) for the variables of the lack of emotion awareness and the lack of emotion clearance in such a manner that the mean scores of the emotion awareness and the lack of emotion clearance for the elder adults stricken with Alzheimer's disease were significantly more than those for the healthy elder.

According to the results presented on Table 1, the total mean scores of emotion self-regulation difficulty for the elder adults stricken with Alzheimer's disease and the healthy elder are 94.66 and 78.94, respectively. This result, together with the results of statistical variation analysis amounting  $F = 6.95$  percent level of significance reject the null hypothesis; therefore, the study hypothesis that the emotion self-regulation in the elder adults stricken with Alzheimer's disease is harder than the healthy elder is confirmed.

### **The discussion and Results**

The present study aimed to identify the differences of emotion regulation skills among the elder adults stricken with Alzheimer's disease and the healthy elder. The results of the study showed that the emotion self-regulation for the elder adults stricken with Alzheimer's disease is harder than that for the healthy elder; in other words, the elder adults stricken with Alzheimer's disease have more problems of emotion self-regulation. In the examination of each variable of emotion regulation difficulties among the two groups it was shown that the lack of awareness, the receipt and cognition of emotion experience, and the lack of emotion clearance in the elder adults stricken with Alzheimer's disease is significantly more apparent; which, this is in accordance with the conceptual modeling by Gratz and et al (2004) for the emotion regulation difficulties. Gratz and et al represent a conceptual model for the emotion regulation difficulties, which consists of four distinct and interrelated variables including 1) the lack of awareness cognition and the perception of emotion experience 2) difficulty in the accessibility to proper tools with regard to the emotion severity or duration 3) the lack of inclination to experience emotion pressure as part of the process to fulfill (the objective, and 4) the inability to persist on the purposeful behavior; so, the occurrence of problem in each one can lead to emotion regulation difficulty. This is in accordance with the results of the study by Henry and et al (2009) which was conducted aiming to examine the emotion cognition skills in the healthy elder and the elder adults stricken with Alzheimer's disease. In their study they proved that this skill is different in the healthy elder and the elder adults stricken with Alzheimer's disease. These results, also, are in accordance with the results of the study by Berebner (1980). They showed that decoding the others' emotions and the understanding of their feelings has been damaged in the elder adults stricken with Alzheimer's disease that leads in the reduction of cognitive performance. Also, the findings were in accordance with the results of the study by Ebner and Fischer (2012) who showed that the emotion concept in the elder is dependent on their experimental performance about their emotion, feelings, and emotion regulation in their previous experiments. Also, they proved that the cognitive-social processes with respect to the understanding of the others' feelings the recovering memory acts differently for different emotion. Therefore, emotions, feeling experiments, and emotion regulation with the growth of age is preserved and even is improved (Ebner and Fischer, 2014). Because of cognitive shortcomings, the elder adults stricken with Alzheimer's disease encounter more emotion difficulties. The cognitive shortcomings include lack of concentration, problems related to memory, unintentional errors, and the inability to remember names (Wallace, 2004) which are inevitable with the elder adults stricken with Alzheimer's disease. The findings also are in accordance with the results of the study by Levenson and et al (2007) that showed that the brain damages during the elderly period in different forms including brunt due to apoplexy and stroke, neurological disorders, such as Alzheimer's disease, and the frontal lobe damages, and etc. can impact their emotion regulation. Further this study is also in accordance with the studies by Kramer, Miller, and Ranking (2013) who proved that moderate emotion and sentiment variations are available in the elder adults stricken with Alzheimer's disease.

This study is in line with the research by Goodkind and et al (2010) who studying the emotion regulation in two groups of the elder with the frontal lobe damages and the elder adults stricken with Alzheimer's disease showed that the emotion regulation in the elder individuals adults stricken with Alzheimer's disease is at a very low rate and these clients act much harder in the regulating and expressing their emotions.

### **Suggestions:**

It is suggested that firstly, a national plan be developed and executed by the Ministry of cooperation, work, and social welfare as the proctor of providing social welfare and by the Ministry of Health as the proctor of health to prevent and examine Alzheimer's disease; secondly, a knowledge of the attendant disease such as Alzheimer's disease in the elderly period be provided and the effective variables on healthy elderly in postponing disease and their prevention and advancement be introduced; thirdly, by educating and identifying the characteristics and requirements of the elderly period for the elder and their

families, the proper life models be created to encourage healthy elderly period; Fourthly, the broadcasted programs on TV, radio and other mass media the primary symptoms of the disease be briefly instructed to prevent it.

### Thanks

The Alzheimer's Association of Iran in This Survey , Thanks.

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