Available online at www.scholarsresearchlibrary.com

Scholars Research Library

Der Pharmacia Lettre, 2015, 7 (7):19-22
(http://scholarsresearchlibrary.com/archive.html)

ISSN 0975-5071
USA CODEN: DPLEB4

Effectiveness of Multi-Sensory Stimulations upon Restoration of Cognitive Performance of Patients exposed Vascular Dementia

Abed Mahdavi[1], Mohammad Ali Besharat[2], Mohammad Ehsan Taghizadeh[3], Soudabeh Isazadeh[4], Nikmanesh Ehsan[5], Ashraf Rezaei[6]

[1]Psychology Department, University of Payam Noor, PO BOX 19395 - 3697, Tehran, IRAN.
[2]Master of Science of Clinical psychology, Psychology Department, University of Payam Noor, PO BOX 19395 - 3697, Tehran, IRAN.
[3]Doctorate of Clinical Psychology, Psychology Department, Faculty of Psychology and Educational Sciences, University of Tehran, Tehran, Iran.
[4]Doctorate of Educational Psychology, Psychology Department, University of Payam Noor, PO BOX 19395 - 3697, Tehran, IRAN.
[5]Master of Science of General psychology, Psychology Department, University of Payam Noor, PO BOX 19395 - 3697, Tehran, IRAN.
[6]Master of Science of psychology, Family Therapy , University of Shahid Beheshti, Tehran, Iran.

ABSTRACT

Dementia disease influenced negative upon different physical, psychological and cognitive dimensions of persons. The aim of this research is to discuss effectiveness of multi sensorystimulations on restoration of patients exposed vascular dementia at 2014. The method was experimental type by pre-post test with control group. The statistical society consist of elders exposed vascular dementia who referred to treatment clinic ate Tehran. Between said society, 40 people have been selected as sampling and divided randomly in two control and experiment group. Then, multi sensory stimulation program has been performed for 20 sessions of one hour to experiment group. But control group did not receive education. The tools for collection data were demographic questionnaire of researcher, psychological files of patients and MMSE questionnaire (Fouastine and et al, 1975). The, the data has been analyzed by descriptive and analytic method by using SPSS software. Based on research findings, there is significant effect between average points of experiment after operation of multi sensory stimulation program and after intervention in control group. In other word, multi sensory stimulation can restore cognitive status in experiment group. Thus, in addition to treatment, this method can apply for cognitive treatment for these patients.

Keywords: Vascular Dementia, Multi Sensory Stimulation, Restore Cognitive Performance

---

INTRODUCTION

Dementia means sever drop of cognitive abilities especially memory and without disorder in awareness, as if daily functions of persons is disturbed (Fauci[1] and et al, 2008). Now, nearly 12 million people are exposed dementia at world and it is anticipated that this average reaches to 25 million people at 2040 (Roman and et al, 2002). The most prevalent dementia is Alzheimer which covers 50 to 60% of persons who exposed dementia. One of the other types

which are the second prevalent factor is vascular dementia (Bono and et al, 1996). Vascular dementia is heterogenic syndrome which different factors like increment age, hypertension and diabetes are involved (Wardlaw[5] and et al, 2009) rate of vascular dementia in elders (65 and up) is ½ to 4/2 %(Davis$_6$ and et al, 1994) today, there are different treatment method for fixing daily activities. Since druge treatment was effective in reduction some of factors (Sutton[7], 2011) but the drugs are prescribed to now have median effects on cognitive and behavioral symbols (Mace & Rabins[8], 2010) the side effects and drug interventions questioned the effectiveness of existing drugs (Cayton[9] and et al, 2010). From new protection and treatment methods is multi sensory stimulation method which is applied in order to enhance comptability of persons who exposed vascular dementia. Application of multi sensory stimulation is based on the patients exposed deprivations of sensory which can influence on protection quality. Multi sensory consists of suitable odors, positive visual stimulation by using images, touch patient and use of mild music. (Riley-Doucet[1], 2009) interventions of multi sensory stimulations are one of the rehabilitation treatment methods which are applied in order to reduce danger of sensory deprivation and facilitate restoration of different responses in help seekers and awake activator system of brain and develop restoration of brain or causes side relations in health axons under these stimulations which help to organizing brain and these stimulations can consist of hearing, visual, taste and smell significant stimulations (Hosseini azizi and et al, 2012). So that the positive effects are not stable and return to previous level by deletion stimulation, but the slight changes causes significant clinical changes in patient (Andretta[2], 2008) today, multi sensory rooms in mental nursing units, pain clinics and children environment are used in order to use of this technique. The progressive vanishing of neuron results to reduce sensorystimulators and confuse normal stimulators. To apply this technique had positive results in persons who exposed special cognitive situations; like dementia (McNeill[3], 2011) as for lacking information and proving results of effects of multi sensory stimulations of patients, the current research, has been performed and designed for determination of multi sensory stimulations on cognitive performance of patients exposed vascular dementia at Tehran.

MATERIALS AND METHODS

Methodology

The method is experimental by pre-post test with control group. The statistical society consisted of all elders who exposed vascular dementia and referred to treatment clinic at Tehran. Between said society, 40 people have been selected as sampling for 20 sessions of one hour and divided in two control and experiment groups. Then, multi sensorystimulation program was given to experiment group and control group did not receive any education. The tools for collecting data consisted of demographic researcher questionnaire, psychological files of patients and MMSE questionnaire. MMSE questionnaire is screening scale which designed by Folstein and et al, 1975. This questionnaire considers evaluation of navigation, time, attention and concentration, calculation, memorize, male and comprehension. The maximum point is 30 and its validity has been confirmed by Foroghan[1] and et al, 2010. The summary examination questionnaire has been completed and distributed for mental situation in pre experiment and post experiment. Educational place has been decorated by colorful papers which there colors are based on views of psychologists. In this place, the easy chairs were given to the participants in session and laser light machine was assembled in front of hall in order to show shapes on wall. Also, a radio cassette was playing mild without speech music with suffice power and based on participants views. There were two bed in the corners of hall for massage which were separated by curtain in order to privacy and the person who had massage saw the end of hall and the remaining did not see him. Air spray was provided based on participants. Also, selected stories from Ferdowsi Shahname and poets from Saadi ad Molana have been selected and considered for different sessions. The time for commencing session was 9 am and evening session was 17pm. The massage was performed in evening sessions. In first of research and session 20th, the mental summary examination questionnaire has been given to the participants and they have been asked the questions. For discussion normality, Kolmogorph-Sminoph test and for comparison average of points, Square T Test before and after intervention by SPSS software have been used.

Findings:

Average age of participants was 66/34 years in experiment group and 66/41 years in control group. 16 people of experiment group and 17 people from control group were married and the remaining lost their spouses. 15 people from experiment group and 16 people from control group had elementary education and the remaining was higher than elementary.

Table 1: comparison difference average and results of square test in order to compare MMSE responses in experiment and witness group before and after intervention

Group	Statistics	Status	Average	Deviation	T	Freedom	Significant level
Experiment		Before After	14/17 17/22	2/99 2/01	-7/65	19	0/001
Witness		Before After	14/64 15/17	2/91 2/67	0/712	19	0/425
Difference before		Experiment Witness	2/16 -0/10	1/02 0/71	6/38 6/47	38 38	0/001 0/001

Based on results of table 1, average responses of summary examination questionnaire in experiment group and after administration of multi sensoryprogram was restored. And the difference is meaningful. (p=0/001). In witness group, the responses had not significant difference before administering multi sensoryprogram to after it. (p=0/425), also, scale of responses had not significant difference in experiment and witness group before administering multi sensoryprogram but in post test, it is recognized that administering multi sensoryprogram in experiment group can restore responses to questions of summary examination test to control group.

Table 2: Covariance analysis of MMSE responses in experiment and witness group

	Sum squares	Freedom	Average Squares	F	Significant Level
Pre test	20.621	1	20.621	8.231	008
Group	138.179	1	138.179	55.152	000
Error	67.646	38	2.505		
Total	6274.000	40			

As displayed in above table, the significant level is 0.008 which is smaller than test alpha 0.05. Thus, the hypothesis is confirmed. In other word, after stability of effects of average responses before administering multi sensoryprogram, there is significant difference between average of experiment and control group.

DISCUSSION

The aim of current research is to determine effect of multi sensorystimulations on restoration of cognitive performance patients who exposed vascular dementia. Based on above results, there is significant difference between average point of experiment group before and after program and control group. In other word, multi sensorystimulation can restore cognitive situation in patients who exposed vascular dementia. Sensorystimulation program which is suitable can provide equivalence environment for the patient and by prevention from sensorydeprivation, avoid unsuitable stimulations and accelerate treatment. The results of the research showed that multi sensorystimulations (mild music and without speech, massage, offer beautiful nature images and good odour spray) enhance cognitive situation, restore life quality, increase memory capability. In fact, sensorystimulations cause mental calmness, restore mental calculations and reduce mental effects due to daily stress.

The results of this research conform to other findings. In study of Collier[1]and et al, 2010 as multi sensorystimulations can restore administrative performance in median to sever dementia which performed in south of England upon 30 patients on rest room of elders (17 people experiment group and 13 people on witness group) in one randomly group. And the evaluation is performed. The results showed restoration of patients' performance. The findings supported multi sensorystimulations on behavior, temper and cognition. Baker[2] and et al, 2001, evaluated short term effects of multi sensorystimulations for patients exposed dementia in one of Netherlands hospital. Although, confusion, and situation of temper showed that the patients were active and happiest after treatment, but there was not change in cognitive behavior which contrasted with results. In study which done by Ozdemir & Akdemir, 2009, as effect of multi sensorystimulation on cognition and scale of anxiety and depression of patients exposed mild Alzheimer hospitalized in rest room of turkey on 27 people, the results showed that the method applied had positive effect on cognitive, depression and anxiety (p=0.0001) which support this study. Thus, it can say that multi sensorystimulations can be effective in restoration of cognitive situation exposed to vascular dementia and the patients will experience better life after treatment.

REFERENCES

[1] Fauci AS, Braunwald E, Kasper DL, Hauser SL, Longo DL, Jameson JL, et al. Harrison's Principles of Internal Medicine. 17th ed . New York: McGraw-Hill Professional; **2008**.
[2] Roman GC, Erkinjuntti T, Wallin A, Pantoni L, Chui HC. *Lancet Neurol* **2002**; 1(7): 426-36.
[3] Bonow RO. *Circulation* **1996**; 93: 1946-50.
[4] Davis M, Espiner E, Richards G, Billings J, Town I, Neill A, et al. *Lancet* **1994**; 343(8895): 440-4.
[5] Wardlaw JM, Doubal F, Armitage P, Chappell F, Carpenter T, Munoz MS, et al. *Ann Neurol* **2009**; 65(2): 194-202.
[6] Sutton Al. Alzheimer disease sourcebook. 5th ed. Detroit: Omnigraphics, Inc; **2011**: 270-80.
[7] Mace NL, Rabins PV. The 36-hour day; A family guide to caring for people with alzheimer disease other dementias, and memory loss in later life. 4th ed. Maryland: Johns Hopkins Univ Press; **2010**: 299.
[8] Cayton H, Graham N, Warner J. Dementia: alzheimer's and other dementias. 2nd ed. London: Class Publ; **2010**: 8-35, 165-176.
[9] Riley-Doucet K. *J Gerontol Nurs* **2009**; 35(5): 42-52.
[10] Andretta PG. The short-term effects of snoezelen treatment on patients with dementia. [PhD dissertation]. Walden: Walden Univ Press; **2008**: 7-10, 37-39.
[11] McNeill S. Neurodegeneration theory disorders and treatment. New York: Nova Biomedical; **2011**: 189-97.
[12] Folstein MF, Folstein SE, Me Hugh PR. *J Psychiatri Res* **1975**;12(5):189-98.
[13] Foroghan M. Handbook of guide line of geriatric psychology. Teharn; Arjmand Publ; **2010**: 27.
[14] Ozdemir L, Akdemir N. *J Neurol Sci* **2009**; 283(10): 211-3.
[15] Collier L, McPherson K, Ellis-Hill C, et al. *Am J of Alzheimers Dis Other Demen* **2010**: 25(8): 698-703.
[16] Baker R, Bell S, Baker E, et al. *Br J Clin Psychol* **2001**; 40(1): 81-96.
[17] Hosseini Azizi T, Hasanzadeh F, Esmaiili H, Ahsai MR. *Journal of North Khorasan University of Medical*. **2012**;4(1) :121-133 [In Persian].