

Effectiveness of Cognitive Therapy in Post-Menopausal Women

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Abstract

Objective: To find the effectiveness of cognitive therapy in post-menopausal women.

Method: The study group consisted of 50 post-menopausal women, aged between 45-65 years, screening of 100 women was done and 50 women having cognitive changes and fulfilling the inclusion and exclusion criteria were selected. They were given exercises for 4 weeks, 4 times per week and pre-post result were calculated on the basis of attention, memory, anxiety and depression. The scores were measured by using mini mental scale, mood scale and Hamilton depression rating scale.

Conclusion: The results demonstrated that there is statistically extremely significant difference in cognitive changes in post menopausal women. ($p > 0.0001$)

Key Words: *post-menopausal, women, cognitive changes.*

Introduction

Menopause is defined as time of cessation of ovarian function resulting in permanent amenorrhea. The climacteric is the phase of weaning ovarian activity, and may begin 2-3 years before menopause and 3-4 years after menopause, it also involves physical, sexual and psychological adjustments. Menopause in India generally occur at the age of 45-50 years (mean age 47 years). During this phase ovarian activity declines, no corpus luteum is formed and no progesterone is formed. Later graafian follicles fail to develop and estrogenic activity is reduced¹.

Due to these changes' women suffer from various symptoms initially such as hot flushes, sweating, insomnia, headache, osteoporosis etc. Ovarian estrogen begins to decline 1 or 2 years before menopause and becomes stable 2 years after menopause. Direct effects

of estrogen influences brain function through effects on vasculature and immune system. Estrogen actions are potentially relevant to cognitive changes occurring after menopause. Estrogen enhances neurite growth, neurogenesis, long term potentiation and episodic memory and has influence on neurotransmitter. Functional brain imaging studies demonstrate that estrogen modulates neural activity during performance of cognitive task. Around the time of menopausal transition, many women report problem with memory (episodic memory), attention, sleep problems, poor concentration, difficulty recalling an acquaintances name, leading to anxiety and depression. Factors such as mood, stress, physical health may also contribute to memory symptoms.²

Cognitive therapy states that thoughts, feelings and behavior are all connected and that individual can move towards overcoming difficulties and meeting their goals by identifying and changing unhelpful or inaccurate thinking, problematic behavior and distressing emotional responses. This also involves the individual testing and modifying beliefs, identifying distorted thinking, relating to others, relaxation and many techniques to improves your overall performance.

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Cognitive therapy is a systematic process utilizing leisure activities and other interesting activities as interventions to address the needs of individuals with cognitive impairments as a means of recovery and well-being.

Study regarding the effects of cognitive therapy on memory, attention, anxiety and depression has not been conducted. We wanted to study its effect in postmenopausal women in whom attention and memory is reduced and signs of depression and anxiety are present.

Materials and Methodology

An approval for the study was obtained from the Protocol committee and the Institutional Ethical Committee of KIMS DU. A study was conducted for a duration of 6 months which was conducted in and around Karad. Individuals were approached and those fulfilling the inclusive criteria were selected.

Subjects

All participants were selected by Convenient sampling method. Each of them was selected according to the inclusion criteria. Female participants were included. Individuals having cognitive changes and willing to participate, between age group 45-65 years were included. Women having any other neurological deficit, any hormonal therapy, suffering from depression and women who had surgical menopause were excluded from the study. 100 participants were screened for the study, 50 individuals who fulfilled the inclusion and exclusion criteria was selected. The procedure was explained and written informed consent were taken from those willing to participate. A session was held in Karad, where data collection was done and exercises were performed for 4 days per week for 4 weeks. Demographic information of the subjects was collected. Primary outcome measure used was Mini mental scale, Mood scale, Hamilton depression rating scale. All the score was taken before and after the treatment.

If the individuals were explained about the purpose of the study. They were informed about the procedure. Each participant was assessed and the scores were calculated and the Data was recorded for the individual participant.

Statistical Analysis

Statistical analysis was done using unpaired t test.

The analysis was performed using the software Instat. Arithmetic means & standard deviation was calculated for each outcome measure and Arithmetic mean was derived from adding all the values together and dividing the total number of values. MS Excel was used for drawing various graphs with given frequencies and the various percentages that were calculated with the software.

Standard deviation (SD) was calculated according to the following formula.

$$\longrightarrow \text{SD} = \sqrt{\frac{\sum (X-X)^2}{N}}$$

Result

The results showed that there is extremely significant difference in cognitive changes in postmenopausal women. (p value >0.0001)

Discussion

The current study was aimed to find the effect of cognitive therapy in postmenopausal women with memory, attention, anxiety and depression difficulty when given for 4 weeks. Total 100 post-menopausal women were screened and 50 individuals having cognitive changes and fulfilling the inclusion and exclusion criteria were selected. Objectives of this study was to find whether there is any effect of cognitive therapy on postmenopausal women with memory, attention, anxiety and depression difficulty; and if yes, how did it affect the daily activities.

A study by Henderson VW compared various age groups with cognitive changes due to estrogen activity. He reported the changes that occur in midlife and later in lifetime. There was significant decline in cognitive changes after 80-85 years and drug therapy showed no improvement in the cognitive changes.² In this article we have selected the age group between 45-65 years as cognitive changes are seen more in this age group.

A recently reported randomized trial of selective estrogen receptor modulator reported on cognition in postmenopausal women revealed no significant difference, although the women who received raloxifene tended to have a slightly lower risk of decline in cognitive therapy as measured by testes of verbal memory and attention. Raloxifene and estrogen may not affect overall cognition but may protect against the development of

cognitive impairment.¹¹

Previously conducted research on estrogen activity on the structure and function of brain areas was known to be involved in memory and attention. Controlled study of administration of estrogen to postmenopausal women have found that estrogen enhances verbal memory and maintain the ability to learn new material.¹⁰

Previously conducted research on HRT activity concluded that there is good evidence that both HRT and ERT do not prevent cognitive decline in older postmenopausal women when given as short term or long-term therapy. It remains to be determined whether factors such as younger age, type of menopause, type of treatment, mode of delivery, and dosage have any positive effects at clinically relevant level. The main cause of change in cognitive function is associated by the activity of estrogen to protect and maintain brain structures. Thus, it is biologically plausible that maintaining high levels of estrogen in postmenopausal women could be protective against cognitive decline.¹⁵

Previously conducted study on cognitive therapy in depression reviewed that cognitive therapy is more effective than behavior therapy or any other forms of psychotherapy addition, it appears that cognitive therapy is independent of the length of the therapy, because the average length of therapy in this study was only 14.9 weeks. It is not clear, however, to what extent the process of cognitive therapy achieves changes in depressive types or to what extent cognitive therapy achieves its therapeutic outcomes through the specific modification of cognitive distortions or depressogenic assumptions.¹³

A study conducted on cognitive rehabilitation for attention deficits following stroke stated that cognitive therapy can improve alertness and sustained attention but there is no evidence that it helps people to do daily activities without help after stroke. Attention problems can occur following stroke, although there is spontaneous recovery with cognitive therapy. The exact mechanism is still unknown and more study needs to be done.¹⁴

There are cognitive changes seen even after HRT, ERT drug treatment and patients with stroke who are not under medications have showed significantly improved results by cognitive therapy. Hence, cognitive therapy may also effective in post-menopausal women. From the above-mentioned effects of cognitive therapy on memory, attention, anxiety and depression. It may significantly improve cognitive functions in postmenopausal women.

Conclusion

The present study provided evidence to support the use of cognitive therapy in reducing the depression and anxiety and increasing the memory and attention in postmenopausal women. Thus, the Alternate hypothesis is proved.

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Conflict of Interest: There were no conflicts of interest.

Ethical Clearance Certificate: Taken

References

- 1) Padubidri VG. Shaw's Textbook of Gynaecology.16th edition. ELSEVIER:2015.1091 p.65-78.
- 2) Henderson VW. Cognitive changes after menopause: influence of estrogen. Clinical obstetrics and gynecology .2008 Sep;51(3):618.
- 3) Alladi S, Meena AK, Kaul Cognitive rehabilitation in stroke: therapy and techniques. Neurol India.2002 Dec;50(suppl): S102-8
- 4) Kok HS, Kuh D, Cooper R, van der Schouw YT, Grobbee DE, Micheal EJ, Richards M. Cognitive function across the life course and the menopausal transitiokn in British birth cohort.Menopause .2006 Jan 1;13(1):19-27
- 5) Tsoi KK, Chan JY, Hirai HW, WongSY, Kwok Cognitive tests to detect dementia: a systematic review and meta-analysis.JAMA internal medicine.2015 Sept 1;175(9):1450-8
- 6) Lin JS, O'Connor E, Rossom RC, Perdu LA, Eckstrom E. Screening for cognitive impairment in older adults: a systematic review for the US Preventive Services Task Fokrce. Annals of internal medicine.2013 Nov 5;159(9):601-12.
- 7) Everyday health [Internet]. New York: Linda Melone; 2015.Brain exercises took bokost your memory; [updated 2015 April 16]. Available from: <https://www.everydayhealth.com/longevity/mental-fitness/braikn-exercises-for-memory.aspx>.
- 8) Hamilton M. A rating scale for depression Neurol Neurosurg psychiatry 1960; 23:56-62.
- 9) Williams JB. A structured interview guide for

- Hamilton Depression Rating Scale. *Arch Gen Psychiatry* 1988;45(8):742-7.
- 10) Sherwin BB. Estrogen and cognitive functioning in women. *Proceedings of the society for experimental Biology and Medicine*. 1998 Jan;217(1):17-22
- 11) Yaffe K, Krueger K, Sarikar S, Grady D, Barrett-Connor E, Cox DA, et al. Cognitive function in postmenopausal women treated with raloxifene. *N Engl J Med* 2001; 344:1207-13
- 12) Hoffman T, Bennett S, Koh CL, McKenna KT. Occupational therapy for cognitive impairment in stroke patients. *Cochrane Database of Systematic reviews*. 2010(9).
- 13) Dobson KS. A meta-analysis of the efficacy of cognitive therapy for depression. *Journal of consulting and clinical psychology*.1989 Jun;57(3):414.
- 14) Lincoln N, Majid M, Weyman N. Cognitive rehabilitation for attention deficits following stroke. *Cochrane database Systematic Reviews*.2000(4).
- 15) Lethaby A, Hogervorst E, Richards M, Yesufu A, Yaffe. Hormone replacement therapy for cognitive function in postmenopausal women. *Cochrane Database of Systematic Reviews*.2008(1).