

# Comparison between Time Taken to Complete MMSE Score by Demented and Depressed Patients

FARWAH ASLAM, AYESHA ASLAM, MOHSIN ZAHEER, SHAHID SIAL, AHSAN NUMAN

## ABSTRACT

**Background:** MMSE is use to evaluate demented patient. Patient is evaluated on MMSE score and time taken to complete MMSE. Normal patients take 7-8 minutes, with score equal or greater than 24. Demented patients take less time to complete MMSE. While depressed patients take more time than the demented patients.

**Aim:** To assess the patients MMSE score and time taken to complete MMSE .To observe that depressed patients take more time then demented patients.

**Result:** 113 subject were screened using MMSE. As a result, 81 subjects have cognitive impairment, while remaining have normal MMSE score. Alzheimer patients took 4 minutes, vascular demented took 3-5 minutes and frontotemporal demented patients took 2 min to complete MMSE respectively.

**Conclusion:** MMSE score in pseudo demented patients were normal .Depressed patient will show both recent and past memory dysfunction. We could not conclude the observation to be any significant value in the future work up/ development for dementia.

**Keywords:** Depression, MMSE score, dementia

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## INTRODUCTION

Dementia and depression are quite common in adult population. These two conditions often coexist. Depression maybe a manifestation of dementia or it may be due to the insight about the disease. However the exact cause effect relation is not well understood.

The symptoms of Dementia include deterioration in memory, intellect and cognitive functions which increase in severity to the extent of interfering with activities of daily living. It's a progressive condition. Early identification of disease can help in slowing down its progression.

Mini Mental State Examination (MMSE) is the most frequently used clinical tool to assess the severity of dementia. It has been widely used for screening dementia. It consists of 30 points questionnaire.<sup>2</sup>This is very easy to administer and takes few minutes only. However it tests five different areas of cognition including orientation, registration, attention & calculation, recall and language<sup>2</sup>. The score is then used to categorize dementia into mild, moderate and severe with low scores indicating severest forms of dementia<sup>2</sup>.

Depression is a clinical condition that leads to a low mood and can co-exist with other medical conditions. It affects the way how a person feels towards life and affects daily life activities<sup>3,4</sup>.

According to the World Health Organization (WHO), depression is the most common illness worldwide and the leading cause of disability. They estimate that **350 million** people are affected by depression, worldwide<sup>5</sup>.

Depression may lead to poor performance on cognitive testing in the absence of actual or true cognitive dysfunction. This poor performance on cognitive testing is likely to reverse upon recovery from depression. However sometimes depression is one of the early signs of impending dementia<sup>6</sup>.

## METHOD

All patients with cognitive dysfunction were evaluated using MMSE. Those who had normal score were further assessed. A total of 113 subjects were included. All patients were aged between 50-72 years, including 72 males and 41 females.

## RESULT

As a result, 81 subjects had cognitive impairment, that included 49 male and 32 female patients .while 32 patients ,including 23 male and 9 female had normal MMSE score. Further investigation was performed on cognitive impaired patients and it was assessed that patient with Alzheimer disease took 4 minutes, patient with vascular dementia took 3-5 minutes and frontotemporal dementia patients took 2 min to complete MMSE respectively. Patients with normal cognitive functions took 7-8 minute to complete MMSE.

## DISCUSSION

Depression and dementia have very complicated relationship, there are many hypothesis that suggest that depression lead to dementia and some suggests the opposite. The depression-to-dementia direction is supported by evidence that depressive disorder is a risk factor for developing dementia in later life<sup>7</sup>.How depression is associated with dementia is still not understood completely .

Depression due to dementia is a more complex topic. 50% of people with AD get depression<sup>8</sup>.There is a possibility that depression is prodromal phase of dementia. One common key factor is that depression and dementia are caused by same pathophysiologic initiator. Depression also damage the brain local integral to cognitive processes, such as hippocampus, possibly by decreasing neurogenesis<sup>9</sup>. While ultimately decrease cognitive loss threshold.

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Department of Neurology department, Lahore General Hospital, Lahore, Pakistan  
Correspondence to Dr. Ayesha Aslam Email: rayesha\_azlam15@yahoo.com Cell:0333-5192758

MMSE plays vital role in screening out dementia. Normal patients take almost 7-8 minute to complete, and score of 24 or greater, which indicates normal cognitive functions. In our assessment pseudo demented patients did not indicate any abnormal MMSE scores but they took longer time to complete the test. While time taken by patients with dementia is less than that taken by pseudo demented (depressed) patients.

## CONCLUSION

We could not find abnormal MMSE score in pseudo demented patient as in literature it is well documented that depressed patient will show both recent and past memory dysfunction as compared to involvement of recent memory dysfunction in demented patients. It is also worth noticing part that isolated depression in old population may lead to dementia in future life. We could not conclude the observation to be any significant value in the future development for dementia.

## REFERENCES

1. Pangman, VC; Sloan, J; Guse, L. (2000). "An Examination of Psychometric Properties of the Mini-Mental Status Examination and the Standardized Mini-

Mental Status Examination: Implications for Clinical Practice". *Applied Nursing Research*. 13 (4): 209–213. doi:10.1053/apnr.2000.9231. PMID 11078787.

2. The Mini Mental State Examination (MMSE) By: Lenore Kurlowicz, PhD, RN, CS and Meredith Wallace, PhD, RN, MSN
3. Salmans, Sandra (1997). *Depression: Questions You Have – Answers You Need*. People's Medical Society. ISBN 978-1-882606-14-6.
4. *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5)*. American Psychiatric Association. 2013.
5. *Depression: Causes, Symptoms, and Treatments* By: Markus MacGill
6. *Depression Induced Cognitive Impairment* : P. V. Rabins, G. D. Pearlson
7. Ownby RL, Crocco E, Acevedo A, et al. Depression and risk for Alzheimer disease: systematic review, meta-analysis, and metaregression analysis. *Arch Gen*
8. <http://www.health.com/health/condition-article/0,,20188947,00.html>
9. Dranovsky A, Hen R. Hippocampal neurogenesis: regulation by stress and antidepressants. *Biol Psychiatry* 2006; 59(12):1136-43.