The Prevalence of Cognitive Impairment among Women with Screened Symptoms of Chronic Obstructive Pulmonary Disease in Amarpur Village, G.B. Nagar, Greater Noida (U.P.)

Rahul Bhatnagar, Apurva Chatterjee, N.H Simon

School of Nursing & Health Sciences, Noida International University, Gr. Noida. INDIA.

Corresponding Author: Rahul Bhatnagar

ABSTRACT

Background: In recent years, COPD is one of chronic disease which is caused in increasing of mortality. In 1990, WHO gives an estimate that the mortality rate of COPD in European standardized is 50 per 100,000 in males and 20 per 100,000 in females. In 1997, WHO provided a data and, in this data, shown that COPD is main cause of death in men it is 4.7% & in women 2.4%.

Methods: It is cross sectional study, there were three tools used for data collection. First was CAT (COPD ASSESSMENT TEST), MMSE (MINI MENTAL STATE EXAMINATION), MoCA (MONTREAL COGNITIVE ASSESSMENT). The sample was conducted purposively, only from those women who having COPD. In this study 60 samples taken from Amarpur village. Data Analyzed by using SPSS version 20 statistical programs & Karl Pearson coefficient test to find correlation between the variables.

Results: A total of 60 participants completed the study. The mean and standard deviation 24.13 and 2.937 respectively Which was assessed by CAT. These finding shows that the participants having COPD accepts the criteria of the CAT test.

Also, the prevalence of cognitive impairment among the participants was assessed by MMSE test and the mean is 16.9 and standard deviation 2.238. Hence, by using MMSE we came to the observation that the elderly women of the region studied have cognitive impairment.

The correlation between the screened symptoms of COPD and Cognitive impairment among the participants was found to be weak but positive and true, as the mean is 16.27 and standard deviation is 3.935 by assessing through MoCA.

Conclusion: In the analysis, there was a significant association of prevalence of COPD among women and there was a weak but positive and true correlation between screened symptoms of COPD and cognitive impairment among the women of Amarpur village Gr. Noida, U.P.

The indicators/ tools of COPD were associated with the cognitive impairment in rural areas. And the factors those are affecting on the health of women mostly. It arises because of the unhealthy environment and the air pollution in rural area.

Keywords: [COPD, Cognitive Impairment, Women, CAT, MMSE, MoCA]

1. INTRODUCTION

COPD is a progressive irreversible respiratory disease caused by airflow obstruction. & It is predominantly caused by smoking, but other factors such as indoor pollution, exposure to biomass combustion & passive smoking can cause COPD (Adeloye D,2015).[1]

Most studies focus on the prevalence of COPD in men, however in the past few years, more females have been shown to take up smoking in developed countries & there is an increased exposure of biomass combustion products in developing countries. The causes of COPD are hypoxemia, hypercapnia, exacerbation & it results in decreasing physical activities.

Other than pulmonary complications, several extra pulmonary complications also exist (Johnson P, 2011). [6]

At first, COPD cause only mild symptoms like an ongoing cough (smoking cough) and productive cough which produce mucus, but according the condition of the patient, the symptoms may become severe as the disease progresses (Mahesh PA, 2013). [2]

Initially, the COPD patient suffers from shortness of breath, especially during activities in field or at home. They also suffer from the wheezing and whistle sounds during breathing and complain of feeling tightness in their chest. The severe symptoms of COPD include, increased swelling in the ankle, foot and legs. The patient also losses weight as the disease progresses (Mahesh PA, 2013). [2]

There are some goals of COPD treatment and it include that the relieving the symptoms which is shown at the time of treatment and flowing the progress of the disease. It may easier to improve the fitness by daily exercise tolerance and make an ability to stay active. It is necessary to prevent and treating the complications properly & avoid smoking and also avoid the lung irritants by using proper medication and vaccines to prevent from the disease (Sharma D,2013). [3]

Patients with COPD may also have problems with cognitive impairment, cognitive decline, cognitive functioning, either globally or in single cognitive domains. Such as information processing, attention and concentration, memory & self-regulation.

Cognitive impairments are difficulties experienced by a person in thinking, remembering, reasoning & understanding environment. The person who have suffering from cognitive impairment, there are some sign and symptoms of cognitive impairment and it include that the patients are confused too much in daily life style and they are unable to take any decision easily.

If these patients are driving the motor car or bike they are unable to coordinate the motor car or bike properly. Due to this disease the patient suffering from short-term and long-term memory loss. They also faced problem to show his own identity in public. these peoples are too much emotionally imbalanced and simply a lack of balance and normal postures by lack of coordination's in daily routine (Kumar ND,2013).[4] It was a major cause of health care costs because of physical and cognitive impairment or disability. According to survey it was assessed that the cognitive function is screened from the tools by the name of MMSE, MoCA. These are the scale using to screened cognitive impairment or disability among peoples and in these scales, the total points are 30 (Sana A,2018).[5]

Cognition is a combination of skills that include attention, learning, memory, language, visuospatial skills, and executive function, such as decision making, goal setting, planning and judgement. MMSE is one of the oldest and most widely used to study cognitive measurement. Till date, treatment of cognitive impairment is not available, therefore, only preventive measures taken should be taken at appropriate time (Sharma D,2013).[3]

2. MATERIALS & METHODS

This study was conducted from January to June 2019 in Amarpur village, G.B Nagar, U.P, India. Which is a study field Assigned by local government to Noida International University. The sample was conduct purposely, only from those women who having COPD. In this study, 60 samples were taken from Amarpur village. It was a cross sectional study. There were three tools used for data collection. First was CAT, MMSE, MoCA and the collection of the study is depending on the condition of women health. In data collection procedure only took that sample those women who having COPD. And it was easily screened from the tools by the name CAT (COPD assessment test). If they got more score

(above 23 out of 40) it means that she is suffering from COPD. Then we used second tool by name of MMSE and took data. and then third tool by name of MoCA used according to the objectives and Data Analyzed by using Karl Pearson coefficient test to find correlation between the variables.

The inclusion criteria were women with Screened symptoms of COPD, those having age between 25 to 65 years and also able to read, write and give written consent form.

The exclusion criteria were male subjects and those are suffering from Respiratory disease other than COPD such as Tuberculosis, asthma and bronchitis, and subjects those are less than 25 and above 65 of age.

3. RESULT

The total score of CAT is 40 and the average score of CAT was 24.13. In the CAT result we found that no one subject suffering from mild COPD,12% of subjects have been found to have moderate COPD, whereas 85% of subjects have been found to have severe COPD and 3% of subjects have been found to have very severe clinical impact of COPD. Figure 3.1 shows CAT result.
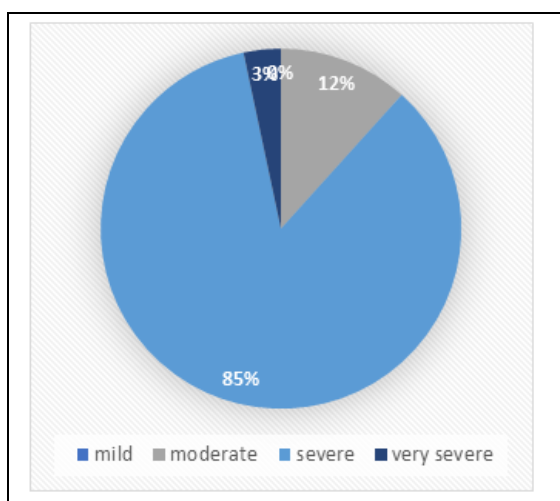

Figure: 3.1: CAT result

The total score for MMSE is 30 and the average score of MMSE above or equal to 24 indicate normal cognition, score

between 19-23 suggests mild dementia, 10-18 suggests moderate dementia and less than 9 indicates severe dementia.

All 60 subjects have scored less than 24 on MMSE, despite clear instructions. 78% of the subjects have been found to have moderate dementia, whereas 22% have mild cognitive dementia.

Even after several attempts, the score on MMSE failed to improve.

The subjects reported having problem mostly with the components of attention, calculation, recall & copying. Figure 3.2 shows score of MMSE
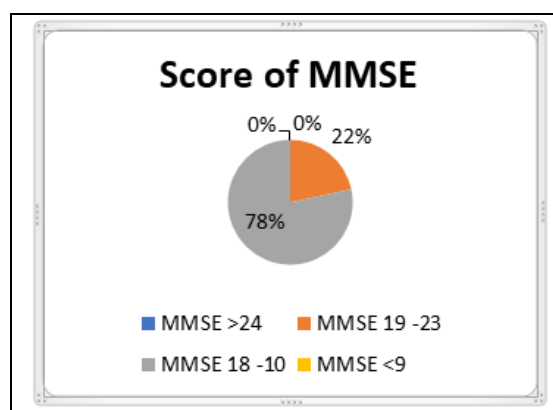

Figure 3.2: Score of MMSE

The total score for MoCA is 30 and the average score of MoCA above or equal to 26 indicate normal cognition. Those who do not have cognitive impairment score an average of 27.4, 22.1 score between suggests mild dementia, those with the average score of 16.2 are said to have Alzheimer's Disease. 70% population had score less than 17, which falls under suspicion for Alzheimer's disease. 15% population has mild cognitive impairment, as they scored less than 22. The remaining 15% is under high risk to develop cognitive impairment, as they scored less than 26.

The correlation between the screened symptoms of COPD and Cognitive impairment among the participants was found to be weak but positive and true, as the mean is 16.27 and standard deviation is 3.935 by assessing through MoCA. Figure3.4 shows graphical correlation between the screened symptoms of COPD and Cognitive impairment.
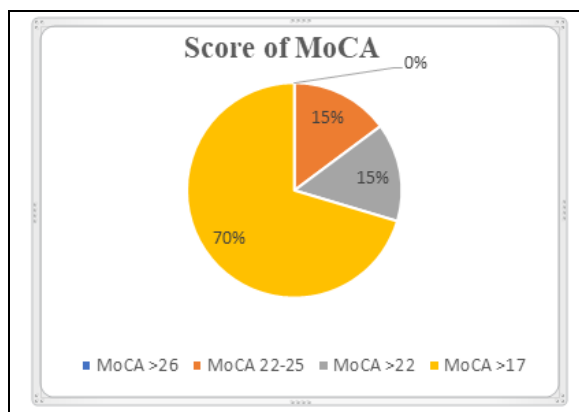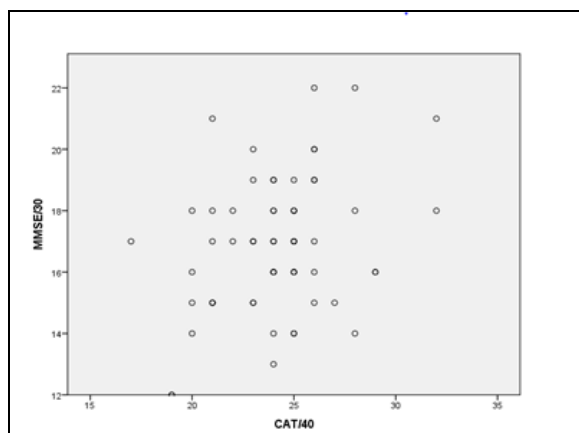
Figure 3.3: Shows score of MOCA

Figure 3.4: Correlation between the screened symptoms of COPD and Cognitive impairment

4. CONCLUSION

In the analysis, there was a significant association of prevalence of COPD among women and there was a weak but positive and true correlation between screened symptoms of COPD and cognitive impairment among the women of Amarpur village Gr. Noida, U.P.

The indicators/ tools of COPD were associated with the cognitive impairment in rural areas. And the factors those are affecting on the health of women mostly. It arises because of the unhealthy environment and the air pollution in rural area.

The women of that village, they are working at home and in the field of agriculture also. So it is also a sign of disease that they were receiving more polluted air in daily routine and it causes COPD and more chances of reduce the level of thinking, making decisions, it also called as cognitive impairment.

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