



PREVALENCE OF COGNITIVE IMPAIRMENTS AMONG YOUNG OLD INDIVIDUALS AT PARUL SEVASHRAM HOSPITAL- SURVEY STUDY

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ABSTRACT

BACKGROUND:

Cognitive impairments are most common disease in older population. Cognitive impairment may lead to decreased quality of life, increased neuropsychiatry symptoms, and increased disability, as well as increased health care. So, the aim of the present study is to evaluate the prevalence of cognitive impairment among young old individuals at Parul Sevashram Hospital.

METHODOLOGY:

This survey study was undertaken on 200 participants with age 65 to 74 years and Students. Subjects were selected according to the inclusion and exclusion criteria. All the subjects were assessed by Montreal cognitive assessment scale. Data were analyzed using MS Excel 2019 and SPSS version 20 software.

RESULT:

In this study 200 young old individuals (age group 65- years) were taken. Both male and female are included. Subjects were assessed by Montreal Cognitive assessment scale. SPSS version 20 and Microsoft word were used for data analysis and score was calculated.

CONCLUSION:

Based on analysis and result it was concluded that Cognitive impairment was present in around 23% of people.

KEYWORDS: Cognitive function, Cognitive impairment, Montreal cognitive assessment scale, Young old individual

INTRODUCTION

The ageing of the world population is a demographic trend that will intensify in the coming decades.^[1] It has been estimated that in India, the population of those aged over 60 years will have increased from its level of 7.7% in 2001 to 12.30% by 2025, and there will be nearly 150 million elderly individuals.^[2] There are many associated challenges which will increase with age. So, maintaining psychological well-being and active life style is necessary.^[3] Increasing number of older people lead to the health challenges such as increasing rate of disease and disability.^[1] With rapid growth in the number of older adults, prevention and treatment of chronic disease of aging are becoming increasingly important.^[4] Some major challenges like cognitive decline, dementia and other disabilities are the main issues associated with aging.^[5] Thus, the World Health Organization described cognitive impairment as being the third leading cause of burden of disease by 2030.^[6] Consequently, cognitive impairment is responsible for decrease in the quality and variety of daily activities and leads to increased mortality risk.^[7] Cognitive impairments are most common disease in older population. According to one researcher cognitive impairment may lead to dementia within five years.^[8] The concept of mild cognitive impairment (MCI), which was developed by Petersen in 1999, defines an intermediate step that connecting the normal aging and dementia.^[9] Cognitive impairment is linked to age, gender, and educational attainment.^[1] This group must be identified not just so that remedies may be created to alleviate individual suffering, but also because they are a population at increased risk of dementia. According to several research, MCI is a risk factor for dementia.^[9] Individuals with MCI have more issues with remembering, learning, and focusing on a task than would be expected given their age and educational level.^[1] MCI may lead to affection in quality of life, increased neuropsychiatry symptoms, and increased disability, as well as increased health care.^[10] In the early stages of dementia, short-term memory loss is the most prevalent symptom. In the early stages of dementia one of the most sensitive indications is alterations in the individual's ability to use necessary equipment in regular tasks.^[8] Changes in one's capacity to handle financial matters and control his or her medicines are also affected. Gradually, as the patient approaches moderate dementia, disability affects simple everyday activities so the individual becomes entirely dependent. As the patient progresses to severe dementia, the patient's capacity to perform simple daily tasks deteriorates to the point where he or she becomes completely dependent. As people get older, their capacity to preserve their autonomy becomes increasingly important to their quality of life. While life expectancy is an essential indication of aging populations, the question of how long individuals may expect to live without impairments has remained a particular matter of concern for the older community in the future.^[8] Elderly persons with cognitive impairment may lose self-confidence, prestige, and worth in their families, as well as a higher financial dependency on relatives, and may be excluded from family decision-making.^[2] So, It is essential to find out that how much population is having by cognitive impairment so we can delay it. Neuropsychological screening measures are used by patients who are suspected of having dementia. This screening examines the overall activity of the higher brain functions. Screening is a key step in the diagnosis of cognitive impairment.^[11] Cognitive tests assess these skills through targeted questions and tasks specific to such functions.^[12] There are various scales which are used to measure cognitive impairment such as Montreal cognitive assessment scale, Mini mental state examination, Clock drawing test etc. ^[13] The Montreal Cognitive Assessment was created to assist screen for moderate cognitive impairment in the first place. It requires little training and may be used by any physician in around 10 minutes.^[13] It evaluates executive functions, visuospatial ability, language, attention, working memory, abstraction, and orientation, among other cognitive domains and talents. It is one of the most extensively used cognitive screening tests in the world.^[14] The Montreal Cognitive Assessment, which has been converted and approved in 36 languages, is a well-validated, accurate, and widely accessible diagnostic tool for detecting MCI.^[12] MoCA have also been designed and validated for use with particular groups, such as the visually handicapped and those with low levels of education.^[12]

Due to aging whereas age related changes may occur. Cognitive impairment is increasing in the older population. Individuals with cognitive impairment have more issues with memory, learning, and the capacity to focus on a task than people of a similar age. It might result in a lower wellbeing and more impairments. There are many researches which have been conducted in population with different diseases in past to know the presence of cognitive impairment but there is a lack of researches on normal young old individual in Parul Sevashram Hospital. This study will be helpful to know the prevalence of cognitive impairment among young old individual at Parul Sevashram Hospital.

METHODOLOGY:

A. SOURCE OF DATA: -

- Young old individuals from Parul Sevashram Hospital, Limda, Ta-Waghodia, Dist.-Vadodara.

B. METHOD OF COLLECTION OF DATA: -

- Study design: - A Survey Study
- Sample size: - 200

C. INCLUSION CRITERIA:

- Age between 65 to 74 years
- Both Male and female were included

D. EXCLUSION CRITERIA:

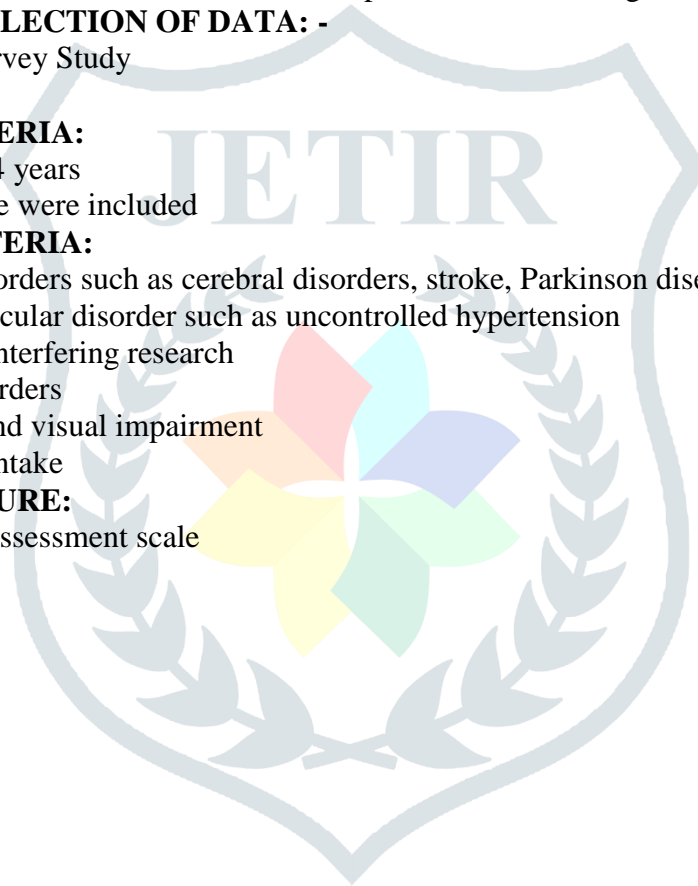
- Any neurological disorders such as cerebral disorders, stroke, Parkinson disease
- Any severe cardiovascular disorder such as uncontrolled hypertension
- Any speech deficits interfering research
- Unstable seizure disorders
- Significant hearing and visual impairment
- Smoking or alcohol intake

E. OUTCOME MEASURE:

- Montreal cognitive assessment scale

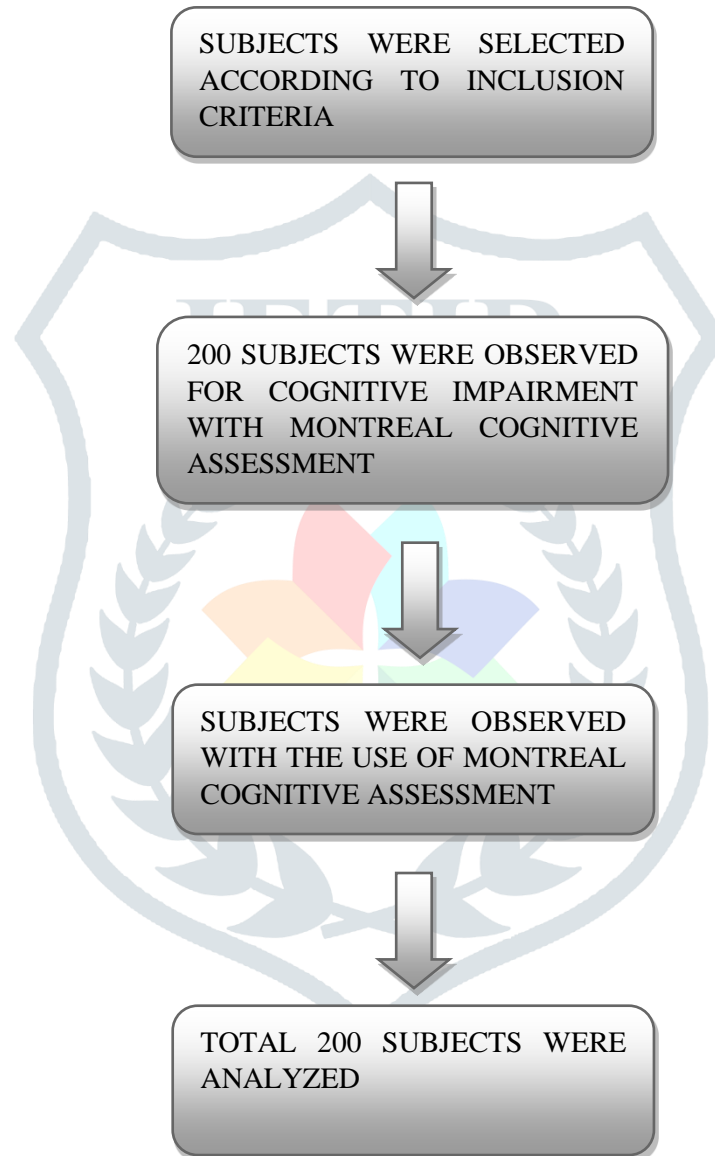
F. MATERIAL USE:

- Assessment Form
- Consent form
- Pen
- Pencil
- Rubber



PROCEDURE:

- The subjects for the study were selected from Parul Sevashram Hospital. Total 200 subjects were taken according to the inclusion and exclusion criteria. Ones falling into inclusion criteria were explained in detail about the study and their role and importance of study. After that written and informed consent was taken from all subjects. Once the consent was signed, outcome measurement was taken in form of Montreal cognitive assessment scale. Data was analyzed by SPSS 20.



RESULT

SPSS version 20 was used for statistical analysis for this study. In the present study, 200 Subjects were taken. Microsoft Excel 2019 was used for the data analysis.

Table no. 1 Distribution of subjects by gender

MALE	FEMALE	TOTAL
138	62	200

Figure 1 Gender Distribution Ratio

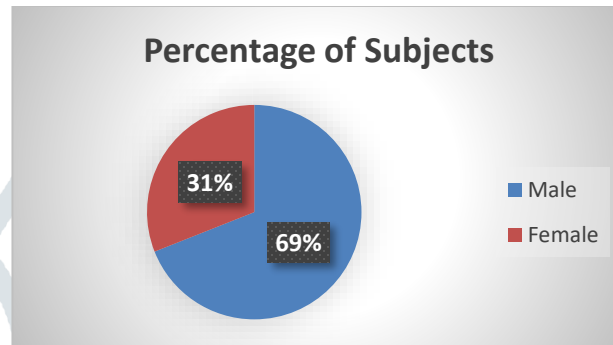


Fig 1. Pie chart shows percentage of total number of subjects included in the study.

Table no. 2 Mean and SD of Age and MOCA

	Mean	Standard deviation
Age	68.5150	2.56
MOCA	26.1950	1.56

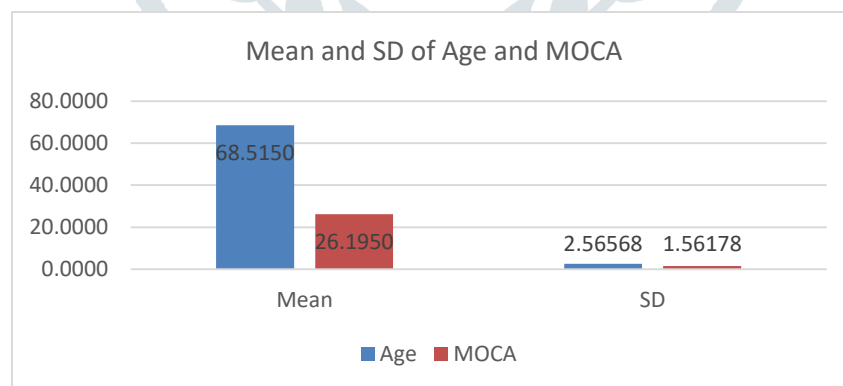


Fig 2: Bar diagram shows the mean and standard deviation of Age and MOCA Score

Table no. Prevalence of Cognitive impairment

Total Subjects	With Impairment	Without impairment
200	46	154

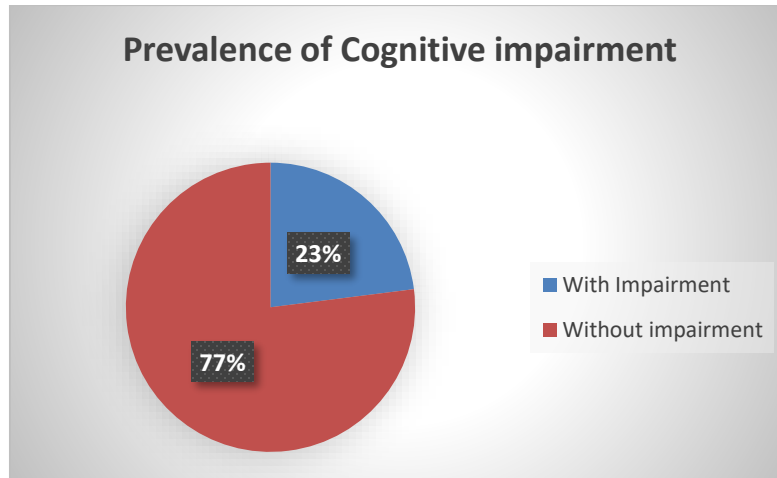


Fig 2: Pie chart shows the prevalence of Cognitive impairment

DISCUSSION

This present study was done to present the prevalence of cognitive impairment among young old individuals at Parul Sevashram Hospital, Waghodia. In this study total 200 samples were collected between 65 to 74 years of age including both male and female.

In this study, Montreal cognitive assessment scale was used which helps to assess several domains such as visuospatial abilities, language, attention, working memory, abstraction and orientation which reflect their present cognitive status. It is evaluated that cognitive impairments are more common in older population. Older population are more prone to cognitive impairment due to age associated brain changes.^[16]

The result of the present study showed that cognitive impairment was present around 23% in young old individual. Study was done on 200 young old individuals whose age is between 64 to 75 years. On the basis of the result, it can be stated that the young old individuals were having borderline Moca score.

According to Paramita Sengupta et al., the prevalence of cognitive impairment in the population of Ludhiana, Punjab is 8.8%.^[2] Sibel Arguvanli also reported that Prevalence of Cognitive impairment and depressive symptoms in community dwelling older adults were 26.1% and 24.9%.^[7] Age, female sex, illiteracy, poor income, being a housewife, non-smoker, being depressed, being 5 unmarried, and having more than four children may all contribute to decreased cognitive functions.

In old age, the brain undergoes structural changes that are associated with age. In addition to other changes, a decrease in brain size is accompanied with an increase in ventricular spaces and cerebrospinal fluid.^[17] Brain atrophy accelerates with ageing and has an anterior–posterior gradient. The prefrontal areas have seen the most drastic modifications. The loss of white matter integrity is the most common cause of normal cognitive ageing. Age-related functional decline supports a deterioration in cognitive and physical function, both of which are necessary for everyday living.^[17] In today's world, things like moving while talking on the phone or reading in the marketplace might be difficult for the elderly. When the functional capacity is deteriorates due to decline in

cognitive function, it will directly affect older person's independence^[18] so it is a foremost thing to highlight that there is marked degree of cognitive slowing due to normal aging.^[19]

Aging is the most common factor which affects the cognitive ability in several domains including attention, working memory and processing speed so they all tend to decline with age.^[20] Structural and functional alterations in the brain with aging will directly lead to cognitive changes.^[21]

According to Ren et al.'s research, the prevalence of cognitive impairment was 32.37 percent among those aged 60 and up, with 25.6 percent of males and 38.1 percent of women. Age, education level and BP levels were significantly associated with cognitive impairment. The frequency of non-vascular cognitive impairment increased dramatically among those aged 70 and older as compared to those aged 60 and older.

According to several studies, in Europe the prevalence of cognitive impairment is between 5.1 and 24.5%, where in North America, the expected cognitive impairment prevalence ranges from 13.8 to 28.3%.^[1]

Early detection and intervention in cognitive impairment can help to reduce the chances of occurrence of dementia and Alzheimer like disease.^[22]

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CONCLUSION

From the outcome of this study, it was concluded that there is a 23 % prevalence of cognitive impairment in young old individuals at Parul Shevashram Hospital, Waghodia. MCI is significantly associated with gender, education level, and economic status. Prevention strategies such as regular exercise, cognitive stimulation, healthy diet, and active social life, which take account of the above factors, are therefore needed with great urgency.

LIMITATIONS

- Study was done at small population.
- Male and female were not in equal number.
- The participants in the study were taken from a single geographical area.

FUTURE RECOMMENDATIONS

- The study may be done at larger population.
- Subgroup analysis can be done.
- Data collected by study can be used in improving cognitive functions and quality of life by providing interventions.
- The study may take equal number of both male and female.
- The study may done individually in male and female.
- Comparison of gender differences, age differences could be done.

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