

A STUDY TO ASSESS COGNITIVE FUNCTIONING AMONG INSTITUTIONALISED ELDERLY IN INDIA

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ABSTRACT

Advancing age deteriorates the cognitive functioning. Nearly half of the elderly population reported difficulty in cognitive functioning. The presence of impaired cognition further leads to major diseases. A study was conducted on 955 institutionalised elderly persons in India. Mini Mental Status Examination (MMSE) was used to assess the cognitive function. The prevalence of impaired cognition among the studied elderly in institutions in India was more than half at 55.4%. Higher prevalence of disturbed sleep quality was found among age group 66-70 years and the elderly who were having joint pains. Also disturbed sleep was associated with gender i.e. females were more affected. Majority 56.2% were taking sleep inducing medications. ANNOVA was applied to assess the relationship of sleep quality with socio-demographic variables and was found to have significant association with gender and sleep inducing medications ($F=3.78$, $df=1$, $p<.05$; $F=3.491$, $df=1$, $p<.05$ respectively). This study reveals that careful health assessment is necessary to screen out deviation in cognitive functioning of elderly living in institutions.

Key Words: Cognitive functioning, MMSE, Institutionalised elderly.

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Introduction

Lawrence Robinson et.al. (2011)⁴ stated that age alone does not cause sleep problems. Disturbed sleep, waking up tired every day, and other symptoms of insomnia are not a normal part of ageing. Instead, poor sleep habits, untreated sleep disorders, medications, or medical problems can contribute to sleeplessness. From the ancient period till modern times, medical scientists have also been struggling to find out the cause and prevention of disease due to ageing process, how to deal with the agonies of old age, and how to keep death at bay, to enjoy 100 conformable years of life, as promised and prescribed in all holy scriptures.

American Academy of Neurology (2009)² described that not everyone declines in cognitive function with age. Elderly people who exercise at least once a week, have at least a high school education and a ninth grade literacy level, are not smokers and are more socially active are more likely to maintain their cognitive skills through their 70s and 80s.

The study followed 2,500 people aged 70 to 79 for eight years, testing their cognitive skills several times over the years. Many of the participants showed decline in cognitive function. Fifty-three percent of the participants showed normal age-related decline and 16 percent showed major cognitive decline. However, 30 percent of the participants had no change or improved on the tests over the years.

Gomaldo AA et. al. (2010)¹ conducted a study on exploring the within-person coupling of sleep and cognition in 50 older African Americans. A within-person daily change in sleep duration was significantly associated with worse global cognitive performance. The greater an individual deviated away from his or her average sleep duration on a particular day, more likely it is that his or her performance would decline. These results demonstrate that the sleep-cognition relationship can be observed at a within-person level of analysis.

PROBLEM STATEMENT: *A study to assess cognitive functioning among institutionalised elderly in India*

OBJECTIVES

1. To assess the cognitive functioning among institutionalised elderly
2. To determine the association of cognitive functioning with selected socio-demographic variables

MATERIALS AND METHODS

A descriptive study was conducted on 955 elderly living in ten institutions. Mini Mental Status Examination was used to assess cognitive functioning. Multistage cluster sampling was used.

RESULTS

The prevalence of impaired cognitive functioning among the studied elderly in institutions in India was more than half at 55.4%. This is depicted in Table - 1 and Figure 1. Frequency and percentage distribution of elderly people according to components of cognitive functioning are depicted in Table - 2 and Figure 2. This shows that cognitive functioning is disturbed according to orientation, immediate recall, attention and calculation, recall and language. ANNOVA was applied to assess relationship of cognitive functioning according to socio demographic variables and it was found statistically significant with gender and sleep inducing medications ($F=3.78$, $df=1$, $p<.05$; $F=3.491$, $df=1$, $p<.05$ respectively).

DISCUSSION

The analysis of data regarding the sleep quality revealed that the 55.4% had impaired cognitive functioning. The cognitive functioning was significantly associated with gender and females were more affected. The findings were consistent with those of **Rakesh Kumar Tripathi and S. C. Tiwari(2011)³** who did a study on Cognitive Dysfunction in Normally Aging 104 Urban Older Adults in India. Findings revealed that maximum normally aging older adults (51.7%) had mild level of objective dysfunction in "orientation" followed by "concentration" (22.5%). Significantly ($P<0.05$) higher number of normally aging males had objective dysfunction in "orientation" and in "functioning/self-care" in comparison with females. Similarly, significantly ($P<0.05$) higher number of subjects aged 70 years or more had subjective dysfunction on "recent and past memory" in comparison with those in 60 to 69 years of age.

Objective 1: To assess the cognitive functioning among institutionalised elderly

Table – 1: Frequency and percentage distribution of elderly people according to cognitive functioning

N=955

COGNITIVE FUNCTIONING	n	%	Mean ± SD
Normal (23-30)	338	35.4	26.29±2.353
Borderline (19-23)	88	9.2	20.32±1.264
Impaired (<19)	529	55.4	13.86±2.838

Maximum cognitive functioning score: 30

Minimum cognitive functioning score: 0

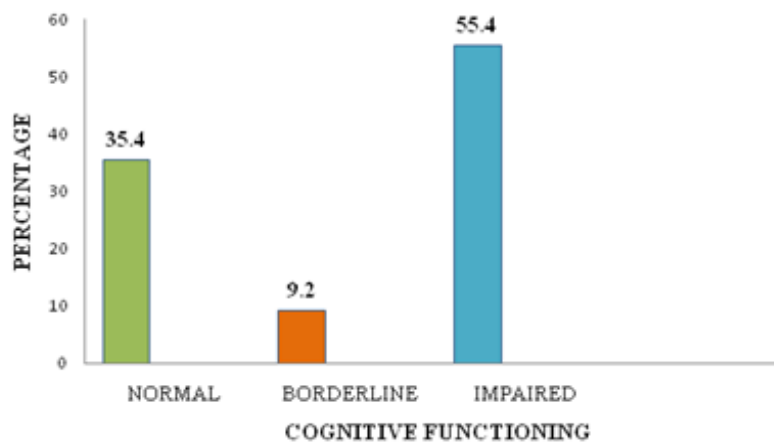


Fig. 1: PERCENTAGE DISTRIBUTION OF ELDERLY ACCORDING TO COGNITIVE FUNCTIONING

Table - 1 and Fig. 1 show the frequency and percentage distribution of elderly people according to cognitive functioning. Maximum elderly people i.e. 55.4% had impaired cognitive functioning, followed by those who had normal and borderline cognitive functioning i.e. 35.4% and 9.2% respectively.

Hence, It can be concluded that elderly people who live in institutions has impaired cognitive functioning.

Table – 2

Frequency and percentage distribution of elderly people according to components of cognitive functioning

N=955

COMPONENTS	LEVEL OF COGNITIVE FUNCTIONING		
	NORMAL	BORDERLINE	IMPAIRED
	MEAN ± SD	MEAN ± SD	MEAN ± SD
ORIENTATION	9.4 ± 0.92	7.18 ± 1.804	4.46 ± 1.462
IMMEDIATE RECALL	2.62 ± 0.492	2.40 ± 0.537	2.01 ± 0.486
ATTENTION & CALCULATION	0.885 ± 5	2.97 ± 0.794	2.36 ± 0.754

RECALL	0.534 ± 5	2.17 ± 0.460	1.84 ± 0.486
LANGUAGE	1.493 ± 9	5.60 ± 2.003	3.19 ± 1.717

Maximum cognitive functioning score: 30

Minimum cognitive functioning score: 0

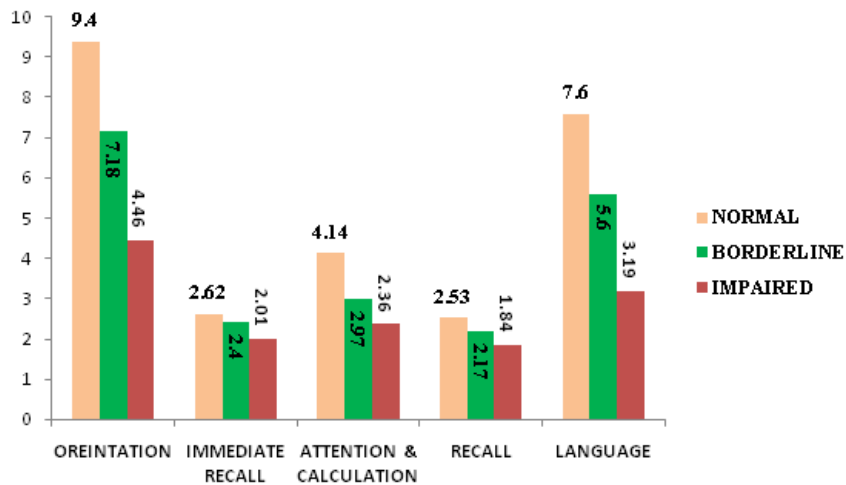


Fig. 2: MEAN OF ELDERLY PEOPLE ACCORDING TO COMPONENTS OF COGNITIVE FUNCTIONING

Objective 2: To determine the association of cognitive functioning with selected socio-demographic variables

Table - 3

Relationship of cognitive functioning among elderly with socio-demographic variables

Variables	n	Mean	Standard Deviation	df Between groups Within groups	F
Age (In Years)					
60-65	301	18.80	6.471	3 951	0.403 ^{NS}
66-70	344	18.68	6.278		
71-75	194	19.29	6.323		
>75	116	18.77	6.234		
Gender					
Male	440	19.28	6.182	1 953	3.780*
Female	515	18.49	6.450		
Education					
Illiterate	300	18.97	6.252	3 951	0.629 ^{NS}
Primary/ Middle	346	18.81	6.417		
Matric./ Sen. Sec.	194	19.16	6.417		
Graduation and above	115	18.17	6.209		

ARTICLES

Marital Status					
Single					
Married					
Widower/ widow					
Sleep Inducing Medications					
Yes	537	18.52	6.389	1	3.491*
No	418	19.29	6.250	953	
Room Partner					
Yes	433	19.00	6.283	1	0.410 ^{NS}
No	522	18.73	6.385	953	
Disease Condition					
Diabetes Mellitus	294	19.31	6.495	3 951	.863 ^{NS}
Joint Pains	354	18.55	6.095		
Eyes Problems	185	18.63	6.438		
Cerebrovascular Accident	122	18.97	6.496		

*Significant at $p < .05$

Table - 3 reveals the association of cognitive functioning with socio-demographic variables. On the basis of ANNOVA test, the findings revealed that gender and sleep inducing medications had statistically significant relationship with cognitive functioning at 5% level of significance. There was also statistically significant relationship between recall and sleep inducing medications at 5% level of significance.

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