

# A Study of Dementia in the Geriatric Patients Attending the Out Patient Department of Nepal Medical College Teaching Hospital.

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## ABSTRACT

**Background:** Dementia is defined as acquired global impairment of higher cortical functions including memory, the capacity to solve problems of day to day living, the performance of learned perceptuo-motor skills, all aspects of language and communication and the control of emotional reaction, in the absence of clouding of consciousness. **Methods:** This study sample consisted of 95 demented patients seen at the Outpatient department of Nepal Medical College Teaching Hospital. **Results:** comparison between patients with Alzheimer's and vascular dementia, these being the most frequent etiologies, a significant difference among the groups in relation to gender was detected, whereby the female gender predominated in Alzheimer Dementia, whereas males predominated in Vascular Dementia. **Conclusion:** clinicians need to be more vigilant to rule out depression, anxiety and dementia in geriatric patients. The increasing trend in the number of geriatric patients with neuropsychiatric disorders warrants a better healthcare and social support.

**Keywords:** Dementia, Alzheimer Dementia and Vascular Dementia.

## INTRODUCTION

Elderly or old age consists of ages nearing or surpassing the average life span of human beings. There is no exact definition of old-age but the National Policy on Older Persons 1999, defines 'senior citizen' or 'elderly' as a person who is of age 60 years or above.<sup>[1]</sup> Although they are referred to as the dependent population, they form an integral part of a community with immense values and knowledge to offer. WHO has adopted 1st October as the international day of older persons in order to raise awareness about the problems faced by older people and their contribution to the society.<sup>[2]</sup>

Dementia is defined as acquired global impairment of higher cortical functions including memory, the capacity to solve problems of day to day living, the performance of learned perceptuo-motor skills, all aspects of language and communication and the control of emotional reaction, in the absence of clouding of consciousness<sup>3</sup>. Hence, it is not a diagnosis but a syndrome, that is, a collection of symptoms and signs without regard to cause. The condition is often progressive though not necessarily irreversible.<sup>[3]</sup>

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Presently, dementia is thought to affect 24 million persons worldwide and is expected to rise to 42 million by 2020. Furthermore, 60% of this demented population lives in developing areas of the world, a proportion expected to increase to up to 71% by the year 2040.<sup>[4]</sup> According to the 2011 census, conducted by the Central Bureau of Statistics of Nepal, the population of people aged 60 years and above, also called senior citizens, was 2.2 million, accounting for 8.3 percent of Nepal's total population of 26,494,504. The majority of senior citizens belong to age group of 60-72 years. These people are at a higher risk of developing dementia in next few years. Based on recent epidemiological studies in LMICs, prevalence rate of dementia can be extrapolated for Nepal. Assuming the prevalence rate of dementia as 3% among 60+ Nepalese senior citizens, compared to 5% in 65+ population of LMICs,<sup>2</sup> at least 66,000 people should have some form of dementia. This figure will double in next 20 years.<sup>[5]</sup>

Patients who had not received a dementia diagnosis accounted for 50% - 60% of all cases of dementia in primary care samples. It is important to have reliable estimates of the prevalence of dementia as this would enable more accurate provision and planning of optimal care for the affected elderly in the community.<sup>[6]</sup> By identifying the risk factors of dementia, subjects who are at risk for the development of dementia will be identified and this

will provide guideline for family physician on choosing subjects that need cognitive screening. Aim of this study was to assess the dementia in the geriatric patients attending the out patient department of Nepal Medical College Teaching Hospital.

## MATERIALS AND METHODS

The study was conducted in the Department of Psychiatry, Nepal Medical College and Teaching Hospital, Kathmandu, Nepal. This study sample consisted of 95 demented patients seen at the Outpatient department of Nepal Medical College Teaching Hospital during the period from June 2017 to may 2018. The study was approved by the Ethics Committee for Research of the Nepal Medical College Teaching Hospital. All subjects and/or their proxies signed an informed consent term. The diagnosis of dementia was based on the Diagnostic and Statistical Manual of Mental Disorders - Fourth Edition (DSM-IV) criteria.<sup>[7]</sup> The diagnosis of Alzheimer's disease (possible or probable) was made according to the National Institute of Neurological and Communicative Disorders and Stroke - Alzheimer Disease and Related Disorders Association (NINCDS-ADRDA) criteria.<sup>[8]</sup> The diagnosis of vascular dementia followed the National Institute of Neurological Diseases and Stroke - Association Internationale pour la Recherche et l'Enseignement en Neurosciences (NINDS-AIREN) criteria of probable and possible vascular dementia.<sup>[9]</sup> The diagnosis of Frontotemporal dementia was based on the consensus on clinical diagnostic criteria for Frontotemporal lobar degeneration.<sup>[10]</sup> Evaluation of patients entailed collection medical history and performing an exam and cognitive testing, which included the Mini Mental State Examination (MMSE),<sup>[11]</sup> a word list (10-item list in a simple immediate recall paradigm - word span - WS) and

Wechsler's immediate logical memory test (MLi).<sup>[12,13]</sup> The Activities of Daily Living Scale (ADL) and the Instrumental Activities of Daily Living Scale (IADL),<sup>[14]</sup> were used to evaluate functional status while the Neuropsychiatry Inventory (NPI) was employed to assess behavioral symptoms.<sup>[15]</sup>

A laboratory evaluation was also performed and included complete blood count, serum sodium and potassium, urea, creatinine, glucose level, cholesterol, triglycerides, alkaline phosphatase,  $\gamma$ -glutamyl transferase, transaminase concentrations, serum thyroxine, thyroid-stimulating hormone, serum VDRL, FTA-ABS, B12 vitamin, folic acid and computed tomography imaging of the head. Patients were classified, according to dementia severity into mild, moderate and severe, based on the Clinical Dementia Rating Scale (CDR).<sup>[16]</sup> The statistical analysis was performed using the Statistical Package for the Social Sciences software. We used student t-test to find the statistical significance. A P-value <0.05 was to be considered statistically significant. Parametric data were analyzed by one-way ANOVA.

## RESULTS & DISCUSSION

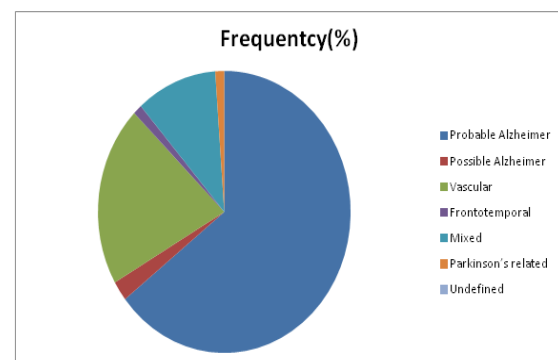


Figure 1: Frequency of Different Types of Dementia in the Geriatric patients.

Table 1: Comparison of demographic & clinical data between Alzheimer Dementia and Vascular Dementia

Variables	Dementia		p-value	
	Alzheimer	Vascular		
Age	78.6±8.06	72.8±6.14	0.025	
Sex	Male	23.8	55.4	0.02
	Female	76.2	44.6	0.06
Mini Mental State Examination(MMSE)	9.2±4.2	11.2±5.3	0.61	
NeuropsychiatryInventory(NPI)(Ftg)	32.6±12.4	43.4±10.6	0.73	
NeuropsychiatryInventory(NPI)Distress	10.4±4.6	9.01±6.21	0.70	
Word span(WS)	1.7±1.02	2.06±1.6	0.36	
Wechsler's immediate logical memory test(MLi)	1.2±0.7	1.2±0.6	0.62	

A total of 95 dementia in the geriatric patients attended Psychiatry OPD during the study period. The patients' age ranged from 60 to 88 years (mean age = 75.7 years). Majority belonged to the age group of 60-72years. [Figure 1] shows the frequency of the different types of dementia in the geriatric patients. Alzheimer's disease was the most frequent,

followed by vascular dementia. [Table 1] shows the comparison between patients with Alzheimer's and vascular dementia, these being the most frequent etiologies, a significant difference among the groups in relation to gender was detected, whereby the female gender predominated in Alzheimer Dementia, whereas males predominated in Vascular

Dementia. Out of whole sample, [Table 2] shows the 26.31% were classified as mild dementia (CDR=1), 45.26% moderate (CDR=2) and 28.42% severe (CDR=3). We observed that 76.3% of Alzheimer's patients were classified as either CDR 2 or 3 (CDR

1=27%; CDR 2=38%; CDR 3=35%), whereas almost half of patients with vas-cular dementia were CDR 1 (CDR 1=45%; CDR 2=37 %; CDR 3=18%).

**Table 2: Shows the severity of Dementia associated with dementia rating scale**

Variables	Dementia Rating Scale			p-value
	Mild (CDR1) Mean±Sd	Moderate (CDR2) Mean±Sd	Severe (CDR3) Mean±Sd	
Mini Mental State Examination(MMSE)	14.6±4.01	9.4±2.07	3.6±2.02	0.001
NeuropsychiatryInventory(NPI)(Ftg)	23.7±12.4	46.6±8.09	28.2±10.4	0.07
NeuropsychiatryInventory(NPI) Distress	10.8±7.2	19.2±3.6	11.2±7.4	0.34
Word span(WS)	2.4±1.6	1.9±1.3	0.5±1.02	0.042
Wechsler's immediate logical memory test(MLi)	1.7±1.6	1.3±1.02	0.5±1.03	0.64
Activities of Daily Living Scale(ADL)	4.6±2.3	6.9±4.2	10.4±2.6	0.001
Instrumental Activities of Daily Living Scale (IADL)	7.6±3.8	9.8±2.6	12.4±4.06	0.01

Alzheimer's disease was the most frequent cause, with patients being predominantly at moderate to severe stages according to CDR, at time of diagnosis. A clear predomi-nance of females was also observed. This present study shows, after Alzheimer's disease, vascular dementia was the second most frequent cause of dementia. This finding is similar to results observed in most studies carried out in Herrera E, Caramelli P et.<sup>[17]</sup> and in outpatient clinics from tertiary facilities.

The frequent co-morbidities and the characteristics of the health service - a reference center for the diagnosis and treatment of dementia - could explain the high rate of un-specified dementia. Furthermore, the majority of patients were at a severe stage of the disease on the first evaluation where this fact could have precluded a better approach and hampered evaluation of important symptoms for diagnosis.

At diagnosis, 73.68% of patients were at a moderate to severe stage of the disease, reflecting the difficulty in per-forming early diagnosis in this facility. This may in part be due to lack of awareness of the population regarding symp-toms of dementia and the general assumptions of memory problems during normal aging. On the other hand, the use of cognitive screening in the routine evaluation of elderly people with cognitive problems is not a general rule in the medical practice. Thus, specialized medical care is only sought when symptoms begin to exert an evident func-tional impact and other neuropsychiatric symptoms, when the disease is already at more advanced stage.<sup>[18,19]</sup>

The scores on the MMSE presented a decline across the three categories of severity (CDR 1, 2 and 3). We recognized congruence between the direction of the decline of the MMSE scores and worsening severity. However, the average scores on the MMSE in each category were considered low for the corresponding CDR. Nevertheless, level of educa-tion could be an important factor for this finding. Similarly, worsening on functional scores (Activities of Daily Living and Instrumentals

Activities of Daily Living) was observed. These functional instruments of assessment are important for following up dementia patients, as well as measur-ing deterioration and guiding appropriate management.

Neuropsychiatric symptoms are commonly found in elderly patients with dementia and Alzheimer Dementia. The relationship between the prevalence of neuropsychiatric symptoms and the severity of dementia has varied widely in several stud-ies, and may not present a significant difference in our sample.<sup>[20]</sup> The frequency and severity of behavioural symp-toms, as well as family distress did not increase with sever-ity. Frequency of neuropsychiatric symptoms and distress was higher among patients at a moderate stage of demen-tia, independent of diagnosis.

## CONCLUSION

The present findings suggest that, the epidemiological inOvestigations, are very important to raise awareness of the proportion of different etiologies of dementia in Nepal, enabling the development of more specific prevention strategies and early diagnosis. The clinicians need to be more vigilant to rule out depression, anxiety and dementia in geriatric patients. The increasing trend in the number of geriatric patients with neuropsychiatric disorders warrants a better healthcare and social support. Substance use disorders continues to be a problem in geriatric population.

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