ORIGINAL ARTICLE

IDENTIFYING DEMENTIA IN ELDERLY POPULATION: A CAMP APPROACH

Anand P. Ambali[1], Chaukimath S. P[2], Srikanth D. M[3], Koli S. S[4]

ABSTRACT: BACKGROUND: Dementia is an emerging medico social problem affecting elderly, and poses a challenge to clinician and caregivers. It is usually identified in late stage where management becomes difficult. **AIM:** The aim of camp was to identify dementia in elderly population participating in screening camp. **MATERIAL AND METHODS:** The geriatric clinic and department of psychiatry jointly organised screening camp to detect dementia in elderly for five days in September 2014 to commemorate world Alzheimer's day. The invitation regarding camp was sent to all senior citizen forums and also published in leading Kannada daily newspaper. Mini Mental Status Examination and Diagnostic and Statistical Manual of Mental Disorders, 4th edition criteria (DSM IV) was used to identify dementia. **RESULTS:** Elderly male participated in camp in more number than females and dementia was identified in 36% elderly with education less than 9th standard. Dementia was found in 18% in our study population. **CONCLUSION:** The camp help identify elderly suffering from dementia and also created awareness about it. Hypertension and diabetes mellitus were common co morbidity in study population. Our study suggested organising screening camp will help identify elderly living with dementia.
KEYWORDS: Dementia, Elderly, Screening.

INTRODUCTION: Dementia is an acquired condition characterized by a decline in at least two cognitive domains (loss of memory, attention, language, and visuospatial or executive functioning) that is severe enough to affect social or occupational functioning.[1]

The mental faculties that are affected in dementia are memory, language, calculation, judgement, and problem solving and visouspatial ability.

According to WHO,[2] 1.8 million people in India are affected by dementia. It estimates that elderly who suffer from dementia spend 11.2% of years living with disability that is significantly more than stroke, cardiovascular disease, and cancer. The prevalence of dementia in urban India as a whole is 1.83%,[3] while in urban south India it is 3.6%.[4] There are 47.5 million dementia cases worldwide so far and 7.7 million new cases are added every year. Dementia is one of major causes of disability and dependence among older people worldwide. The stigma attached to it acts as barrier to diagnosis and care.[5] The elderly with dementia also places lot of stress on care givers. Most of the cases of dementia are diagnosed only when the symptoms become severe. In primary care settings 29-76% of patients with dementia or probable dementia are undiagnosed.[6] However it can be diagnosed early when clinician suspects or screens for it voluntarily.

Hence, screening to identify dementia in elderly will help recognise early cognitive impairment. This in turn helps clinicians to anticipate problems the elderly may have in understanding and adherence to recommended treatment modalities. Identification of dementia

ORIGINAL ARTICLE

in early stage will help family members to cope with the problem they are likely to face when full blown dementia sets in.

The dementia may be screened by a simple screening instrument ie Mini Mental Status Examination (MMSE). It is used worldwide. It is most evaluated instrument with 25 published studies.[7] It just takes 15 to 20 minutes to apply. It is easily available and can be used in outpatient and inpatient settings. It is also available in Hindi language and can be adjusted to the education status of elderly.

It is studied in various populations and with varied educational level. The sensitivity and specificity of MMSE is better than other screening instruments[7]. An analysis from fourteen studies involving 10,185 participants shows MMSE has sensitivity of 88.3% and specificity of 86.2%.[8]

According to United States Preventive Services Task Force Recommendation Statement,[7] screening for dementia by various studies has not shown direct or indirect harms from false positive or false negative results of MMSE.

The screening for dementia in our set up holds more importance because elderly and family members consider forgetfulness as part of ageing. Secondly, early identification will help family members to plan for the care of elderly. Hence a study was planned to screen through camp approach.

The objectives of the camp were to;
1. To identify dementia in elderly.
2. To create awareness about dementia in elderly.

MATERIALS AND METHODS: A screening camp to detect dementia in elderly population (above 60yrs) was carried out for five days, daily between 09.00am to 05.00pm, to commemorate Wold Alzheimer's Day 2014 from 15/09/2014 to 19/09/2014 at Geriatric Clinic and Department of Psychiatry, BLDE University's Shri B M Patil Medical College Hospital and Research Centre, Vijaypur. The invitation for elderly was notified in news-papers in local language and invitation printed in local language were circulated to all senior citizen forums in Vijaypur.

A total of 110 senior citizen attended the camp, out of which 27 were excluded as per exclusion criteria. The 27 elderly participants who were suffering from psychiatric illness, who were already on treatment for dementia, those unable to communicate due to decreased hearing or diminished vision and cases admitted in hospital for acute illness were excluded.

Screening for dementia was carried out in 83 elderly participants. Mini mental status examination was administered and DSM IV was also used to detect dementia in elderly. After obtaining informed consent, the psychiatrist and geriatric physician administered MMSE to all participants. The score was adjusted as per Folstein's[9] guidelines in elderly with different educational status. A score of less than twenty in elderly who have grade less than 9th standard and score of twenty two and less, in elderly who have studied more than 9th standard was cut off point for identifying dementia. The Preliminary data regarding past occupation, education level, co morbid conditions, drugs used were recorded in a specified format by post graduate student.

ORIGINAL ARTICLE

RESULTS: Among 83 elderly people the youngest was 60 years old and the oldest was 90years old. The elderly population was classified in three groups depending upon age, ie young old (60-74 yrs), old old (75 -84yrs) and very old (85+) Table -1.

Age group (Yrs)	Male	Female	Total	%
60 -74	48	09	57	69
75-84	14	05	19	23
85+	05	02	07	08
Total	**67(80%)**	**16(20%)**	**83**	
Table 1: Age and sex distribution				

Males (80%) outnumbered females (20%). Majority of participants (ie 69%) were in age group of 60 to 74 years of age. The interesting thing noted is seven very old (85+) people have participated in the camp. All the participants were literate. This may be due to the elderly people who read news-paper came to know about the camp and have attended. Table -2.

Education level	60-74 years		75-84 years		85+ years		Total	%
	Male	Female	Male	Female	Male	Female		
< 9th standard	09	06	05	05	03	02	30	36.10
>9th standard	16	02	03	00	00	00	21	25.30
Graduate	22	01	05	00	01	00	29	34.90
Post graduate	01	00	01	00	01	00	03	03.60
							83	
Table 2: Educational level of participants								

Among thirty elderly whose education status was below 9th standard, dementia was identified in eleven. Table-3

Score/Age	60-74	75-84	85+	Total	%
Score less than 20	07	03	01	11	36
Score more than 20	08	07	04	19	64
Table 3: Mini mental assessment score of the study population with education less than 9th standard. (n=30)					

In the elderly whose education status was above 9th standard, dementia was identified in four. It was found that elderly in age group of 60 to 74 years irrespective of educational status had more prevalence of dementia. Table-4.

Score/ Age	60-74 yrs	75-84yrs	85+ yrs	Total	%
Less than 22	03	00	01	04	07
More than 22	39	09	01	49	93
Table 4: Mini mental assessment score of the study population with education more than 9th standard. (n=53)					

ORIGINAL ARTICLE

In the elderly who had low educational level, the prevalence of dementia was 36% and in those whose educational level was higher than 9th standard, the prevalence was 7%.

Out of 67 males, dementia was identified in 11 % and among 16 females dementia was identified in 43%. A prevalence of dementia in this study was found to be 18%. Table -5.

Sex	Total number	Dementia identified	%
Male	67	08	11
Female	16	07	43
Total	83	15	18
Table 5: Sex wise distribution of dementia			

The common co morbid conditions noted were hypertension, diabetes mellitus, ischemic heart disease, chronic obstructive pulmonary disease and osteoarthritis. There were more than single co morbidity in some cases. Table-6.

Co morbid condition	Number (15)
Hypertension	6
Diabetes Mellitus	2
Ischemic heart disease	1
Chronic obstructive pulmonary disease	2
Osteoarthritis of knee	1
Anaemia	2
Stroke	1
Parkinson's disease	1
Table 6: List of co morbidity	

DISCUSSION: Most of studies on dementia prevalence have not been uniform across the India. There are variation in estimates among studies reported so far, in view of differences in ethnic, cultural and environmental factors. Shaji S[4] in his study reported prevalence of 3.6% in Kerala while Raina SK[3] reported prevalence of 1.83% in Jammu district.

The screening camp was attended by elderly in age group of 60 years to 90 years of age. Males outnumbered females probably because they had access to print media and were gathering in the senior citizen forum meetings.

Literacy rate in elderly participants was high in this study group. This was due to the literate elderly having access to print media while elderly with less educational background also participated in view of their willingness to participate in health check-up camps. This study showed prevalence of dementia (36%) in elderly with low educational background which is high. Similar observation was seen in the study by Mathuranath PS[10] which states low education is an important risk factor next to age and sex. Lindsay J[11] also showed low educational status (<an 8th grade education) is a risk factor for development of dementia.

Hypertension and Diabetes Mellitus were common co morbidity in the study population.

ORIGINAL ARTICLE

In our study, prevalence rate is 18%. This high rate may be due to following reasons. Firstly, the dementia screening camp was organised for the first time in vijaypur exclusively for senior citizen. Secondly, the awareness created by print media might have motivated the care givers to get the person suspected to be suffering from dementia to the camp for confirmation of diagnosis. Third reason possible that most of elderly have got their friends who were labelled as suffering from mental illness for confirmation of what exactly is the disease the elderly is suffering. Fourth reason is that the authors who happen to be psychiatrists and geriatrician have administered MMSE test and DSM IV criteria on elderly participants which will have positive impact in diagnosis and also help to rule out other mental health problems like depression and delirium which are considered as differential diagnosis. Also, the MMSE by Folstein[9] has clear instructions to identify dementia in elderly with high and low educational status, hence false positivity was restricted.

CONCLUSION: Early identification of dementia in elderly by screening methods is well accepted modality worldwide. The MMSE is a good tool for screening dementia in elderly population at risk. Psychiatrist administering MMSE helps make firm identification of dementia while excluding depression and delirium. The camp approach to identify dementia is very helpful in Indian context where lot of superstition is attached to elderly suffering from dementia. Also the family members are neither aware nor prepared to handle the elderly suffering from dementia. Recently it was found that even stress can lead to cognitive impairment. A screening program to identify dementia in elderly at early stage will help the family members to plan management strategies and prevent or postponement of burden on care givers. Life style modifications, physical and mental exercises, yoga, reduce the stress and prevents cognitive impairment. The theme for world Alzheimer's day for 2014 is "Dementia: can we reduce the risk"?

LIMITATION: The limitation of the study is it is hospital based camp, and results cannot be generalised to elderly population of this area.

REFERENCES:
1. American Psychiatric Association. Diagnostic and statistical Mannual of Mental Disorders, Fourth edition. Washington, DC: American Psychiatric Assoc; 1994.
2. WHO. World Health Report 2003-Shaping the future. Geneva: WHO, 2003.
3. Raina SK, Razdan S, Pandita KK. Prevalence of dementia in ethnic Dogra population of Jammu district, North India. A comparison survey, Neurol Asia 2010; 15: 65-9.
4. Shaji S, Bose S, Verghese A. Prevalence of dementia in an urban population in Kerala, India. Br J Psychiatry 2005; 186: 136-40.
5. Dementia. Fact sheet World Health Organisation.N^0 362.March 2015. Http//www.who.int.ageing. Last accessed on 15/03/15.
6. Valcour VG, Masaki KH, CurbJD, Blanchette PL. The detection of dementia in the primary care setting. Arch Intern Med, 2000; 160:2964-8. (PMID: 11041904)
7. Moyer VA. Screening for Cognitive Impairment in Older Adults: U.S. Preventive Services Task Force Recommendation Statement. Ann Intern Med 2014; 160: 791-797.

ORIGINAL ARTICLE

8. Lin JS, O'connor E, Rossom RC, Perdue LA, Eckstrom E. Screening for cognitive impairment in older adults: a systematic review for the U.S. Preventive Services Task Force. Ann Intern Med 2013; 159: 601-12

9. Folstein MF, Folstein SE, and McHugh PR: Mini-mental state: A practical method for grading the cognitive state of patients for the clinician. J Psychiatry Res 1975; 12: 189-98.

10. Mathuranath PS, Cherian JP, Mathew R, George Alexander A, Sarma SP. Mini mental state examination and the Addenbrooke's cognitive examination: Effect of education and norms for a multicultural population. Neurol India 2007; 55: 106-10.

11. Lindsay J, Laurin D, Verreault R, et al. Risk factors for Alzheimer's disease: a prospective analysis from the Canadian Study of Health and Aging. Am J Epidemiol 2002; 156: 445-53.

AUTHORS:
1. Anand P. Ambali
2. Chaukimath S. P.
3. Srikanth D. M.
4. Koli S. S.

PARTICULARS OF CONTRIBUTORS:
1. Professor, Department of Medicine, Geriatric Physician, BLDEU, Shri B. M. Patil Medical College Hospital and Research Centre, Vijaypur.
2. Professor & HOD, Department of Psychiatry, BLDEU, Shri B. M. Patil Medical College Hospital and Research Centre, Vijaypur.
3. Assistant Professor, Department of Psychiatry, BLDEU, Shri B. M. Patil Medical College Hospital and Research Centre, Vijaypur.
4. Post Graduate Student, Department of Medicine, BLDEU, Shri B. M. Patil Medical College Hospital and Research Centre, Vijaypur.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:
Dr. Anand P. Ambali,
Department of Medicine,
Geriatric Clinic, BLDEU,
Shri B. M. Patil Medical College
Hospital & Research Centre,
Vijaypur-586103, Karnataka.
E-mail: anandambali@yahoo.com