A STUDY TO ASSESS THE PREVALENCE AND THE LEVEL OF DEMENTIA AMONG ELDERLY RESIDING IN A SELECTED URBAN COMMUNITY

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Abstract : A study to assess the prevalence and level of dementia among elderly residing in a selected urban community at Kollam. Descriptive approach with non-experimental descriptive design was adopted for this study. The researcher assessed the level of dementia using Dementia Mental Status Examination Scale, a standardised tool adapted from Strub, R.L. & Black, F. W. (2000). Convenient sampling was used to select 50 elderly from selected urban community at Kollam. The findings of the study were that 6 percent of the samples had Stage I dementia, 2 percent belongs to Stage II and 2 percent belongs to Stage III dementia. The computed Chi-square value shows that there is a significant association between age and the level of dementia among elderly at 0.05 level.

Key words: Dementia, prevalence, level of Dementia, Elderly.

I.INTRODUCTION

Dementia is a maladaptive cognitive response that features a loss of intellectual abilities and interferes with a person's usual social or occupational activities. The loss of intellectual ability includes an impairment of memory judgment and abstract thought. The onset of dementia will be usually gradual. It can result in progressive deterioration. Personality changes often occur and may appear either as an alteration or as an accentuation of the person' s usual character traits. In some cases the process of dementia can be reversed and the person's intellectual functioning improves if the underlying stressors are identified and treated. In many cases dementia involves a continual and irreversible declining mental function and behaviour. Dementia may occur at any age, but most often affects the elderly. This condition results from structural and neuro-chemical changes in the brain as a result of trauma, infection, cerebro-vascular disruptions, substance use, or an unknown cause.

Alzheimer's disease is the most common type of dementia and accounts for 65% of cases for dementia. It is estimated that 4.8 million people in India have Alzheimer's disease. The prevalence of Alzheimer's disease doubles every 5 years in those between 65 and 85 years of age. The onset of symptoms occurs after 40 years of age in 96% of cases and 80% of case are seen between the ages of 45 to 65. It is the fourth leading cause of death after 75 years of age.

Suffering from dementia is undoubtedly a devastating event. Dementia has a variable aetiology and there is an unclear relationship between neurological impairment and social functioning. Dementia has a profound impact on all aspects of the individual's life and those who care for them. Since the medical prognosis of dementia is assured only in its pessimism, many care interventions have focused on relieving the family carer support groups, training day and respite care.

Annual incidence of newly diagnosed dementia rises from about 20/1, 00,000 population at the age group of 60 years, to 2000 per1, 00,000 population at the age of 80 years. Clinicians now estimate that about 50% of these persons aged 65 years and older have" pure Alzheimer disease" and 80 yrs older have pure vascular dementia. An overlap between these two is approximately 10% to 15% of patients. Between 5% to 10% of patients with dementia are suffering from diffused Lewy body disease and the remaining 10% of the dementia cases represents progressive supra nuclei palsy, Parkinson's dementia and other less common diagnosis.

The advancement in the medical sciences estimated that there are 416 million old people aged above 60 years around the world by the year 2020.In India 6.5% of the population are over 65 years. About 5% of the total populations over 65 years have physical, mental, behavioural impairments that require continuous nursing care. Ageing brings decline of memory and cognition as the frontal lobes of the brain begins to function less effectively, the memory and decision declines.

According to World Alzheimer's Report 2009, prepared by King's College, London said there would be 35 million people worldwide with dementia by 2010. That number is set to almost double every 20 years to 65.7 million in 2030 and 115.4 million in 2050. Going by the new estimates, the report said the percentage increase of the number of people with dementia in the next 20 years will stand at 107% in south Asia, 134% in Latin America and 125% in North America and Middle East. Indeed, the numbers and statistics surrounding dementia are staggering. Worldwide, there are now an estimated 24 million people living with some form of dementia. Without a major medical breakthrough in the fight against dementia, this number could jump to as many as 84 million who have age-related memory loss by the year 2040.

A systematic review of the global literature on the prevalence of dementia (1980-2009) and meta-analysis to estimate the prevalence and numbers of those affected, aged ≥60 years in UK. It was estimated that 35.6 million people lived with dementia worldwide in 2010, with numbers expected to almost double every 20 years, to 65.7 million in 2030 and 115.4 million in 2050. In 2010, 58% of all people with dementia lived in countries with low or middle incomes, with this proportion anticipated to rise to 63% in 2030 and 71% in 2050.

A study was conducted at Italy to find out the prevalence of dementia and the effects of age and gender in community dwelling elderly. A door-to-door two phase population survey was used to collect data from 1147 randomly selected elderly samples. The results showed the prevalence rate of dementia was 8 percent and also that the prevalence rate for dementia did not differ between men and women (7.9 v 8.2), but increased with age (from 1.1 at age 65-69 to 34.8 at age 90-96). The study concluded that prevalence rates of dementia did not differ between men and women, but increased with age.

A Delphi consensus method was used by Alzheimer's disease international to determine dementia prevalence for each world region. 12 international experts were provided with a systematic review of published studies on dementia and were asked to provide prevalence estimates for every WHO world region, for men and women combined, in 5-year age bands from 60 to 84 years, and for those aged 85 years and older. UN population estimates and projections were used to estimate numbers of people with dementia in 2001, 2020, and 2040. The study revealed that the evidence from well-planned, representative epidemiological surveys is scarce in many regions. The study estimated that 24·3 million people have dementia today, with 4·6 million new cases of dementia every year (one new case every 7 seconds). The number of people affected will double every 20 years to 81·1 million by 2040. Most people with dementia live in developing countries (60% in 2001, rising to 71% by 2040). Rates of increase are not uniform; numbers in developed countries are forecast to increase by 100% between 2001 and 2040, but by more than 300% in India, China, and their south Asian and western Pacific neighbours.

A meta-analysis was done in Finland by reviewing 11 cohort studies. A total of 2346 cases of mild to severe dementia were identified in 11 cohorts. Age-standardized prevalence was 6.4% for dementia (all causes), 4.4% for Alzheimer's disease, and 1.6% for Vascular Dementia. The prevalence of dementia increased continuously with age and was 0.8% in the group age 65 to 69 years and 28.5% at age 90 years and older. The corresponding figures for Alzheimer's disease (53.7% of cases) were 0.6% and 22.2%, and for Vascular Dementia (15.8% of cases), 0.3% and 5.2%. Variation of Alzheimer's disease prevalence across studies was greatest for men. In the Vascular disease subtype, a large variation across studies was observed, as well as a difference in prevalence between men and women that was age dependent. Dementia is more prevalent in women, and Alzheimer's disease is the main contributor to the steep increase of prevalence with age. The study concluded dementia as an important health problem among the elderly.

II. Research Methodology

The people with chronological age group above 50 years were considered for the study.

Assess : refers to the act of determining the level of dementia measured using Dementia mental status examination scale.

Prevalence refers to the percentage of the population affected by the dementia

Dementia is described as a decline in mental ability severe enough to interfere with daily life, usually associated with old age, involving problems with memory and reasoning, measured by the Dementia mental status examination scale. The standardised Dementia Mental Status examination Scale adapted from Strub, R.L. & Black, F. W. (2000) was used to assess the level of Dementia.

2.1.Research approach

To accomplish the objectives of the study, descriptive approach was found to be appropriate to assess the level of dementia.

2.2.Research design

Research design is the researchers overall plan for obtaining answers to the research question, including specifications for enhancing the study integrity. The design adopted for this study by the investigator is non experimental descriptive design.

2.3.Variables under study

The descriptive variables under study are the prevalence and the level of dementia**.**The demographic variables under the study is age, sex, educational status, previous occupation and disease condition.

2.4.Research setting

The study was conducted in an urban community at Ramankulangara, Kollam.

2.5.Population of the study

In this study the population comprised of elderly above 50 years.

2.6.Sample

In this study sample comprised of 50 elderly from selected urban community at Ramankulangara, Kollam.

2.7.Sampling technique

Convenient sampling was used to select the sample in this study.

2.8.Tool or Instruments

The tool for assessing the level of dementia is a standardised tool adapted from Strub, R.L. & Black, F. W. (2000). The Mental Status Examination in Neurology (4th ed.). Philadelphia: F.A. Davis.

The following tools were used to collect the data:

1. Demographic Proforma
2. Dementia mental status examination scale.

Tool 1 : Demographic Proforma

It consists of a total of 5 items which were related to the demographic data of adults. The areas included were age, sex, education, previous occupation and other disease condition.

Tool 2 : Dementia mental status examination scale

Dementia mental status examination scale is used to measure the level of dementia using 12 sub categories-verbal fluency, comprehension, naming and word finding, orientation, new learning ability, verbal story for immediate recall, visual memory, paired associate learning, constructional ability, written complex calculation, proverb interpretation and similarities.

The investigator was introduced to the subjects and the purpose of the study was explained to them. Confidentiality was assured and a written consent was obtained. The investigator used demographic proforma for collecting the relevant demographic data and the study was conducted during the period from 10 June 2016 to 10 July 2016.

Results

Section I: Sample Characteristics

According to Age wise distribution, 32 percent of the samples belong to the age group 50-69 years, 40 percent belongs to 60-69 years, 10 percent belongs to 80-89 years and rest belongs to 90-99 years. About 52 percent of the samples were males and 48 percent of samples were females. Almost 36 percent of the samples studied up to higher secondary and 30 percent of the samples had primary education. Among the samples, 30 percent of them were unemployed and 18 percent had government jobs. Around 50 samples 32 percent have cardiac illness, 20 percent have vascular illness, 16 percent of them have endocrine disorders and the rest have other illnesses.

Section II- Prevalence and level of Dementia Among elderly.

Dementia mental status examination scale was used to measure the level of dementia. The scale has 12 sub categories-verbal fluency, comprehension, naming and word finding, orientation, new learning ability, verbal story for immediate recall, visual memory, paired associate learning, constructional ability, written complex calculation, proverb interpretation and similarities. Total score was 100. The stages of dementia were categorized as Stage I with Mean score(SD)- 57.2(9.1) ; Stage II with Mean score(SD)- 37.0(7.8); and Stage III with Mean score(SD)-13.4(8.1).

Table 1: Frequency, percentage, mean and standard deviation of level of dementia among elderly

(n=50)

Level of dementia	Mean score(S.D)	Frequency (f)	Percentage %	Mean M	S.D σ
Stage I	57.2(9.1)	3	6		
Stage II	37.0(7.8)	1	2	73.72	13.2
Stage III	13.4(8.1)	1	2		
Normal	67.9(11.0)	45	90		

Ten percent of the total samples were suffering from dementia. About six percent of the samples had Stage I dementia, two percent belongs to Stage II and two percent belongs to Stage III. The mean scores of the 50 elderly residing in the community were 73.72 with a standard deviation of 13.2.

Section III : Association between level of dementia and selected demographic variables

Table 2 : Chi square value between level of dementia and selected demographic variables like age, sex, educational status, previous occupation and disease conditions.

(n = 50)

Demographic Variables	Normal	Stage I	Stage II	Stage III	Total	Df	$\chi 2$
Age(in years)							
50-59	16	0	0	0	16		
60-69	18	1	1	0	20		
70-79	6	1	0	0	7	12*	36.052
80-89	5	0	0	0	5		
90-99	0	1	0	1	2		
Gender							
Male	22	1	1	0	24	3	2.570
Female	23	2	0	1	26		
Education							
Primary	13	1	0	1	15		
High school	16	1	1	0	18		
Predegree	9	0	0	0	9	15	6.583
Degree	5	1	0	0	6		
Post graduation	1	0	0	0	1		
Others	1	0	0	0	1		
Previous occupation							
Unemployed	12	2	0	1	15		
Government employee	8	1	0	0	9		
Private employee	13	0	1	0	14	12	8.162
Self-employed	10	0	0	0	10		

Others	2	0	0	0	2		
Presence of any diseases							
Cardiac illness	14	2	0	0	16		
Vascular disorders	8	0	1	1	10	6	4.876
Endocrine disorders	8	0	0	0	8		
Others	15	1	0	0	16		

$\chi2_{(3)}$ =9.59, $\chi2_{(6)}$ =12.59,$\chi2_{(12)}$=21.03, $\chi2_{(15)}$=25.00

The computed Chi-square value shows that there is a significant association between age and the level of dementia among elderly. There is no significant association between the level of dementia and selected demographic variables like gender, education, previous occupation and presence of any illness.

Discussion

The findings of the present study are in congruence with another conducted in Kerala to investigate the prevalence of Dementia in urban population at Kochi. Cluster sampling was used to select 1934 elderly samples from the rural community. A vernacular adaptation of the Mini-Mental Status examination is used to diagnose the cases. The results revealed that the prevalence of dementia among elderly was 3.36%. The study concluded dementia as an important health problem among the elderly.

Another study supported the findings of the present study which is to find the effects of age and gender on the prevalence of dementia in community dwelling elderly. A door-to-door two phase population survey was used to collect data from 1147 randomly selected elderly samples. The results showed the prevalence rate of dementia was 8 percent and also that the prevalence rate for dementia did not differ between men and women (7.9 v 8.2), but increased with age (from 1.1 at age 65-69 to 34.8 at age 90-96).

The study results along with the supportive studies show that the there are patients suffering from dementia in all the communities but majority of them remain undiagnosed. Most of the people are unaware about the signs and symptoms associated with dementia. Nurse educators not only have the role in educating the students but also have the responsibility to teach the newly appointed staffs, auxiliary nurse midwives and other care givers in the old age homes and community regarding various measures to screen the elderly clients for dementia. The government should initiate Orientation program to the care givers in the old age homes, geriatric wards and in the community regarding the ways to identify dementia at an earlier stage. The nurse administrators should initiate in service programs to update the knowledge of staff nurses, public health nurses and psychiatric nurses regarding dementia and its management.

Conclusion

The present study aimed to asses the prevalence and level of dementia among the elderly residing in selected urban community at Kollam. The findings of the study showed that 10 percent of the total samples were suffering from dementia. About six percent of the samples had Stage I dementia, two percent belongs to Stage II and two percent belongs to Stage III. The mean pre test scores of the 50 elderly residing in the community were 73.72 with a standard deviation of 13.2. a significant association between age and the level of dementia among elderly. So the study was effective in assessing the prevalence and level of Dementia among the elderly.

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