



## Prevalence of Noncommunicable Diseases (NCDs) in the Elderly Population in an Ayurvedic Tertiary Care Hospital at Thiruvananthapuram, Kerala

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### Abstract

**Background:** Globally there is a trend of increasing geriatric population which is attributed to progress in the medical field, better living condition and increasing the life span. There is a rise in noncommunicable diseases due to changes in life styles in elderly population also. The pattern of noncommunicable diseases presented to the Ayurvedic system of medicine, can be different from modern system of medicine, which is poorly studied. Here we are estimating the prevalence of noncommunicable diseases in the elderly population presented in our institution.

**Materials and methods:** We conducted this study as a cross-sectional study in patients above 60 years presented in Geriatric OPD at Government Ayurveda College, Thiruvananthapuram during the period from June 2018 to August 2018. A validated questionnaire based on self-reported symptoms adapted from the World Health survey was used for identified NCDS (ICD-10). Considering previous studies which show the prevalence of NCDs in the older population as 63% by using equation  $4pq/d^2$ , the sample size for the current study is calculated as 105. Data entered in Microsoft excel and analysis done.

**Results:** Out of 105 patients 48 were males and 57 patients were females. The most common Noncommunicable disease presented was Arthritis (81.9%) followed by Hypertension (57.1%). The prevalence of other NCDs were DM (49.5%) cataract (36.1.2 %.) Depression (23.8%)

**Conclusion:** The presentation of NCDS in Ayurvedic hospitals differs. There is a need for formulating strategies in Ayurveda to tackle NCDs in the elderly population here where a sizeable number of Kerala population depends on.

**Keywords:** Ayurvedic Tertiary Care, Elderly, Geriatric, Noncommunicable diseases.

### INTRODUCTION

Human life expectancy is increasing due to advances in the medical field and improved living conditions Ageing is not an illness, but the elderly is vulnerable to evolving non communicable diseases.

Noncommunicable diseases (NCDs) are a group of diseases that affect individuals over an extended period of time causing socio-economic burden to the nation. It is causing more than 50% of mortality in India. Life Style changes, demographic changes, urbanization caused a trend of increasing prevalence

of NCDs. Due to change in lifestyle, the prevalence of Noncommunicable diseases is increasing in geriatric age group also. Rapid ageing of the population and increasing non-communicable diseases (NCDs) among the elderly is one of the major public health challenges in India [1]. Practice of Medicine in India includes various modality like Modern Medicine, Ayurveda, Sidha, Homeo etc. Significant proportion of Indians are depending Ayurveda for management of their ailments especially in rural population [2]. A significant proportion of the Geriatric population seeks medical care for various ailments in Ayurvedic hospitals due to various reasons. But the trend is changing in the present era. They seek Ayurvedic treatment in preventive and curative aspect. The age limit of getting NCDs have become early and the life style health risk factors and multiple NCDs have increased tremendously in adult population in India [3]. Pattern of NCDs presented to Ayurvedic systems of Medicine may be different and poorly studied [4]. The aim of the study was to estimate the prevalence of non-communicable diseases in elderly population in an Ayurvedic tertiary care centre at Thiruvananthapuram.

## MATERIALS & METHODS

This is a cross Sectional Descriptive Study conducted over 3 months between June 2018 to August 2018 at Geriatric OPD of Swasthavritta Department at Govt Ayurveda College, Thiruvananthapuram. This is one of the largest centres where patients taking treatment in Ayurvedic system medicine for different ailments. The Average OP is around 200 / day. All patients above 60 years of age irrespective of gender were included in the study.. We conducted the study by a validated questionnaire based on self-reported symptoms adapted from WHO health Survey for identifying Non-Communicable Diseases(ICD-10) (2). Considering previous studies which shows prevalence of NCDs in older population as 63% by using equation  $4pq/d^2$ , sample size for the current study is calculated as 105<sup>1</sup>Data was entered in Microsoft excel. Descriptive analysis done. Those patients who were not given consent were excluded from the study population. Institutional ethical clearance was taken for the study.

## RESULTS

Out of 105 patients 48 (45.7%) were males and 57 patients (54.2%) were females. Mean age 61.8. All were married except one. 9 were separated and 28 were widower/widow. There were 32 (30.47%) patients who retired from various Government Departments. There were 23(21.9%) patients who were self-employed which included manual labourers, drivers, carpenters, businessmen, politicians etc. There were 51 housewives in study population.

Most Common NCD presented was arthritis (83.8%) followed by Hypertension (57.1%). Only 8 patients (7.61%) had single comorbidity. Arthritis was most common NCD among both males and females; but it was found to be more prevalent in females than males (49.52 Vs 35.24%).

Arthritis followed by Hypertension was the most common NCDs in all age groups irrespective of gender. Prevalence of depression was 23.9%. Depression was more common in 60-70 age groups. Arthritis (81.9%) followed by Hypertension (67.71%) were the most common NCDs in patients retired from Govt Service. Arthritis (82.6%) followed by cataract (52.17%) and DM (52.17%) were most Common NCDs in Self-employed. Prevalence of other major NCDs include Chronic Respiratory Diseases (15.2%), BPH (9%) and Others (26%).

## DISCUSSION

The Non-Communicable diseases in Geriatric population especially in Ayurvedic hospitals are poorly studied.

Noncommunicable diseases (NCDs) kill 41 million people each year, equivalent to 71% of all deaths globally. Each year, more than 15 million people die from a NCD between the ages of 30 and 69 years; 85% of these "premature" deaths occur in low- and middle-income countries.[5]

In our study on geriatric patients 45.7% were males and 54.2% were females. The study by Mini etal. which is a multicentric study also showed 47% male patients with NCDs in Geriatric age group [6]. In our study most Common NCD noted was Arthritis followed by Hypertension, Diabetes, dyslipidemia and cataract The finding is similar with the study results of Mini etal although the percentage distribution varies [6].

Prevalence of self-reported NCDs in geriatric group as reported by Emily *et al.* includes Hypertension (30.3%) and Arthritis (24.7%) [7]. In our study more people had arthritis compared with hypertension and diabetes. This may be because health care seeking behavior of patients and the selection bias involved as most patients in geriatric OPD reported for arthritis and were already taking modern medicine for their other ailments [8].

In our study Arthritis was the most common NCD among females (49.5%) which is similar with observation of Emily *et al.* which showed 66.6% [7]. Prevalence of Depression in our study was 23.9% though study by Nakulan *et al.* showed a prevalence of 39.1% and out of that 57.7% were females and 70.9% were in 65-74 year age group [9].

## CONCLUSION

Ayurveda always emphasize on prevention rather than cure. According to Ayurveda, the root cause of diseases is the violation of rules behavioral and moral conduct. Ayurveda evolved intensive life style care by adopting the principles of Swasthavritta. This involves the regimens like Dinacharya, Ritucharya, Sadvritta etc. The concept of Ayoga, Atiyoga and MithyAyoga of Kala, Buddhi, Indriyarth (Kala-Parinama, Prajnaparadha and Asatmyendriyarth Samyoga) as the three fundamental causes of disease which truly refers to the errors of life style [10]. Avoidance of improper activities of body, mind and speech by willful transgression of rules, control of the senses, remembering previous experiences and acting rightly, good knowledge of the land, time (season, age) and the self and their importance to health, adherence to rules of moral conduct, conduct of proprietary rites, not coming in contact directly with bacteria, virus, insects and other creatures can prevent the onset of diseases [11]. This knowledge implies that primordial and primary prevention acts wisely in preventing NCDs. The lifestyle habits (ahara, vihara, achara) from the childhood onwards can influence our ill-health in the old age. In the present era fast foods, tinned foods, lack of exercise, busy work schedule, improper sleep pattern, wrong conduct, all these factors have a great impact on the increasing prevalence of NCDs. Yoga can be incorporated to daily regimen which aims at the maintenance of physical efficiency, purification and

relaxation of internal organs, removal of diseases, longevity and mental purification [12].

There is a need for formulating strategies under Ayurvedic system of medicines to tackle NCDs especially in elderly population where a sizeable number of Indian populations depends on that especially for diseases like Osteoarthritis. Further multicentric studies with larger sample size needed for knowing exact prevalence of NCDs from Ayurveda hospitals.

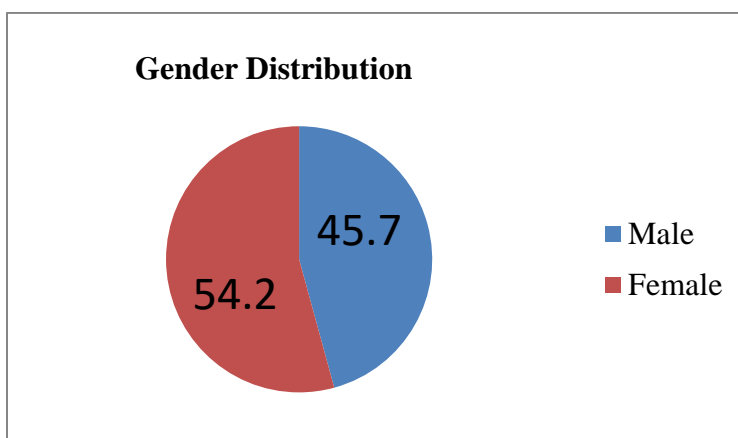
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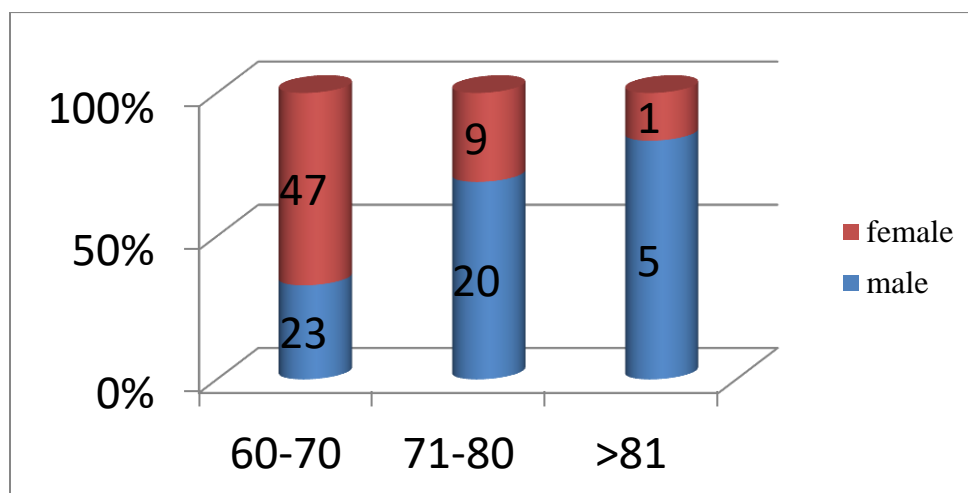
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**Demography of Study Population (%)**

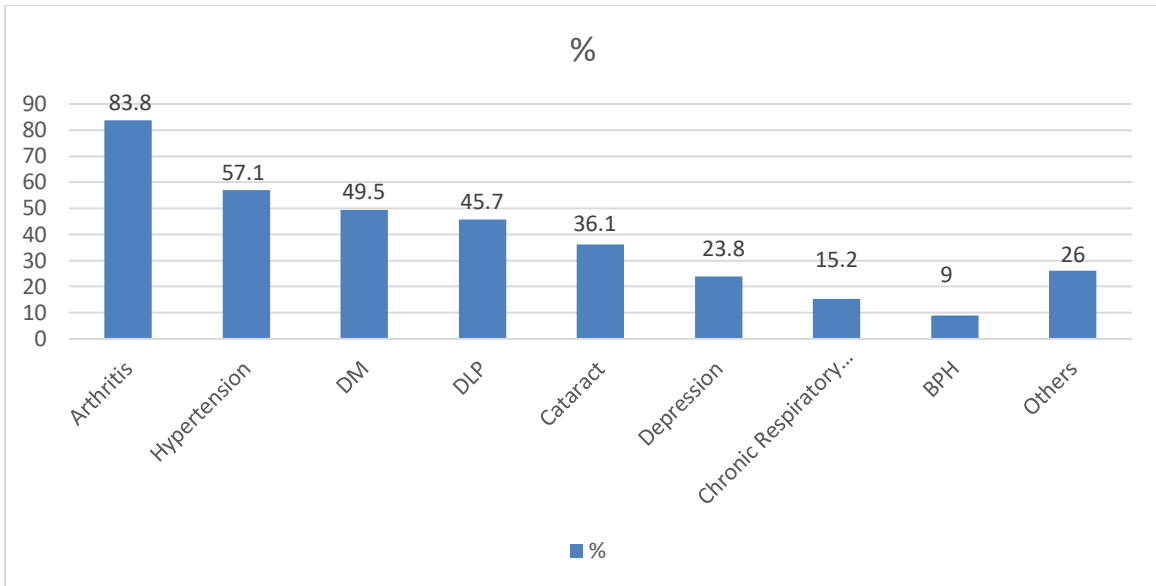
**Graph 1: Gender distribution**



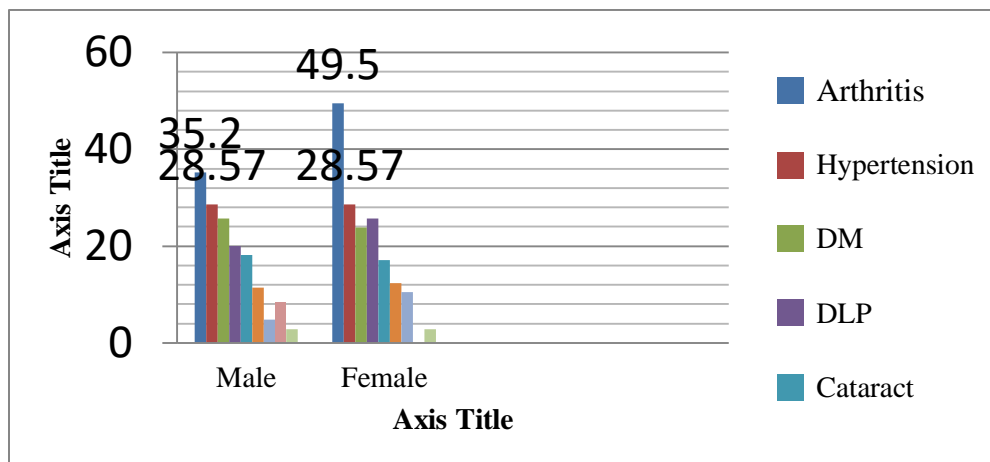
**Graph 2: Age distribution**



**Graph 3: Prevalence of observed NCDs**



**Graph 4: NCD Gender Distribution**



**Graph 5: NCD Age group distribution**

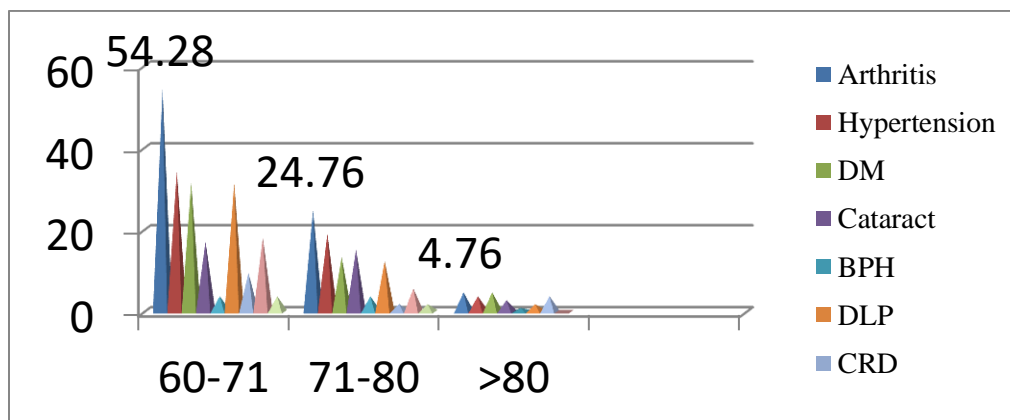


Table 1:Prevalance of major NCDs

Disease	M	F	60-70	71-80	>81	Total	
Arthritis	37(35.24%)	52(49.52%)	57(54.28%)	26(24.76%)	5(4.76%)	83.8%	
Hypertension	30(28.57%)	30(28.57%)	36(34.29%)	20(19.05%)	4(3.81%)	57.1%	
Diabetes	27(25.71%)	25(23.81%)	33(31.43%)	14(13.33%)	5(4.76%)	49.5%	
Dyslipidemia	21(20%)	27(25.71%)	33(31.43%)	13(12.38%)	2(1.9%)	45.7%	
Cataract	19(18.1%)	18(17.14%)	18(17.14%)	16(15.24%)	3(2.86%)	35.2%	
Depression	12(11.43%)	13(12.38%)	19(18.1%)	6(5.71%)	0(0%)	23.8%	