

Assessment on Nutritional status, biochemical parameters and the lifestyle of the Elderly with Chronic Disease Conditions Residing in Old Age Homes of Mysore City.

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ABSTRACT

Background: Old Age Homes (OAH) elderly with non-communicable diseases (NCDs) are at risk of conditions due to their reduced ability to self-manage and suboptimal facilities with regard to health status and poor medical facilities. **Objective:** The main objective of the study is to assess nutritional status, the biochemical parameters and lifestyle of the elderly with chronic disease conditions in elderly residing in old age homes. **Methods:** This study is carried out in Six OAH. In these OAH, out of 122 elderly, 92 subjects (male n=42 and female n=50) were identified with NCD condition-Diabetes Mellitus (DM), Hypertension (HTN), Arthritis, Coronary heart disease (CHD), Gastritis. Further, these 92 subjects were analysed for the biochemical parameters. The Institutional Ethical Committee approved the study, and informed consent was obtained from all the participants. **Results:** The average age of elderly was 74±8 years. In the fasting blood sugar category 11.9% were above the range and 75.4% random blood sugar were above the range and diagnosed with Hyperglycemia. The elderly of 25-50 % were having joint pains, blurred vision, weakness and oedema. **Conclusions:** From the current study the major observation was lack of knowledge in the management of chronic disease condition. It indicates that it may be one of the major causative factors for the comorbid conditions in the elderly. It is strongly suggested modification in the lifestyle and there is a need of nutrition education and regular health check-up of elderly residing in the OAH.

Keywords: Non communicable disease (NCD), Health issues, Physical activity, Old age Homes (OAH), nutrition education

INTRODUCTION

The word Geriatrics was invented by Ignatz L Nascher, a Vienna-born immigrant to the United States in 1909. If the father of geriatrics was Nascher and Marjory Warren was its mother.¹ According to a new report released by the WHO International Day of Older Persons was declared by UN General Assembly in 1st October 1991.²

Sir James Sterling Ross says "You do not heal old age. You protect it; you promote it; you extend it." Ageing is a normal, physiological, inevitable, biological and universal phenomenon that happens in all the living beings.³

Now-a-days, the role of families in case of older person has declined due to structural changes which have taken place in the Indian society and the concomitant disintegration of the joint family system, which has resulted in the rejection or neglect of the aged.^{4,5}

Advancing age is accompanied by progressive increase in chronic conditions such as HTN, CVD, Osteoporosis, Diabetes and Dementia. They are susceptible to certain food borne illness, health complications caused by those illnesses but also likely to experience significant changes in dietary needs.⁶ Nutrition has emerged as a major modifiable determinant of chronic disease and age related decline. Health and well-being are determined not only by our genes and personal characteristics but also by the physical and social environments.⁷

Before the 1930s chronic condition, elderly patients were often medically neglected: they were not properly examined but received benign guardianship and expected a bed for life. The first doctor who was interested in geriatric medicine showed that many such elderly patients, which considered unbeatable, could be treated and remobilised. These doctors had to contend with considerable ignorance not only the problem of the treatment not being met, but also most people do not realise there is a problem'.^{8,9}

Prevention programs to reduce chronic disease risks have traditionally focused on children and younger adults. However, many researchers have started to focus their interest and attention on older adults. This change in outlook has come about due to demographic changes; people are now living longer, and consequently the older population is increasing rapidly and medical expenditure is rising with the onset of several major chronic diseases.^{10,11}

As the population of older adults continues to increase, there is even more urgency to establish nutrition assessment standards to evaluate the nutritional status of this vulnerable population¹². There is a high prevalence of under-nutrition among seniors and the cases of insufficient energy or micro and macronutrients are alarming. Unfortunately, this nutritional state is often mis-diagnosed because of inappropriate

assessment. The nutrition diagnosis needs to be accurate in order to provide effective intervention.¹³

Screening and assessment tools identify factors affecting nutritional health and can also provide specific directions for planning, implementation, and evaluation of tailored interventions.¹⁴

Health status of older adult's decreases with age. Some of the elderly are burdened with chronic diseases, including being overweight and obese. Obesity is one of the most common nutritional disorders in older adults. Nutritional factors are especially pronounced in increasing obesity among seniors 65 years and older from 12% in 1990 to 19% in 2002.¹⁵

Reducing the risk of premature chronic disease in some older adults may be helped by the promulgation of accurate information through education programs and individual counselling, translating nutritional guidelines into manageable food use. Knowledge may not be reflected in actual practices without attention to the past experiences and perceptions of the target audience.^{16,17}

The studies conducted by CDC and other groups have carried out substantial research for proving a significant relationship between nutritional choice (intake) and health ailments like hyper-insulin-anaemia, HTN, dyslipidaemia, CHD and type2 DM. This proves that nutrition is now acknowledged as an important aspect in determining the health status of the individual^{18, 19}.

MATERIALS and METHODS: The present study was conducted in six OAH of in and around Mysore City, Karnataka, India. This study was designed as the Community based educational study. The plan of research work was approved (JSSMC/IEC/05/0202/2017-18) by the Institutional Ethical Committee, JSS Medical College, JSS Academy of Higher Education & Research, Mysuru Karnataka. Permission from the management of all the OAH was taken. Prior to the implementation of the study assigned consent was taken from each individual participant. Structural questionnaire were designed with the help of senior Dietician and expertise professional in Community health.

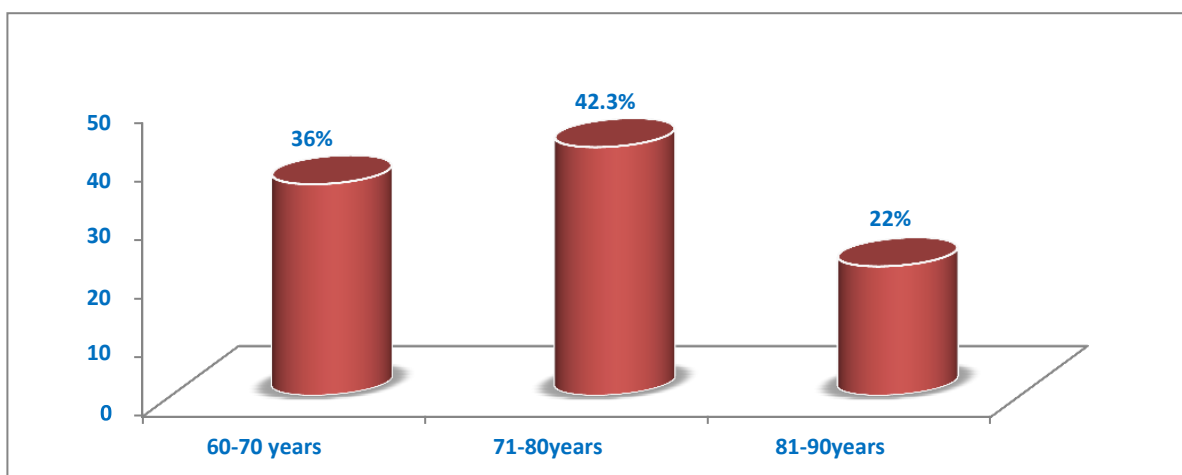
The questionnaire is categorized in General information, Disease history, Clinical signs and symptoms and physical activity. A detail of the disease history for the elderly subjects residing in OAH includes non-communicable disease. Brisk walking was only the physical activity performed by the elderly. The data collected was subsided in percentage and mean standard deviation. Among the selected OAH, 122 elderly were willing to participate in the study. The 122 subjects were conducted for RBS and BP and out of which 92 were identified with diabetes, hypertension. Further the 92 subjects determined for Blood sugar, Cholesterol, Triglycerides, Albumin,

Calcium, Total Protein, SGOT, SGPT, Phosphorus, Urea, Alkaline phosphatase and Creatinine parameters were estimated by using diagnostic kits in the blood serum drawn by the phlebotomist and clinical signs and symptoms by using standard questionnaire.

From that 92 elderly diagnosed with NCD condition such as; DM, HTN, CHD and along with other health problems like Arthritis, gastritis, were selected for the further survey. 60 years and above elderly were included in the study and a completely bed ridden or any psychological problems elderly were excluded in the study. The data collected was subsided in percentage and mean standard deviation.

RESULTS: In the present study, 122 subjects residing in and around OAH of Mysore were accepted to participate. Out of 122(n=92) were identified with the Diabetes, Hypertension, CHD, Arthritis, Thyroid. From the questionnaire, social demographic data, Disease condition, MNA, Clinical signs symptoms and physical activity was recorded. The total subjects were distributed based on age and it shows that 33 (36%) age of 60-70 years, 39(42%) age of 71-80 years and 20(22%) age of 81-90 years. The mean \pm SD of the age was 74 ± 8 whereas in the education category 30.4% primary, 42% SSLC, 5.4% PUC and 22% degree. Financial management was through children, house rent, etc. The main reason for residing in OAH was children in abroad, not willing to stay with parents and parents were not willing to stay with the children. The frequency of visiting the elderly in OAH and family members was once or twice in a year.

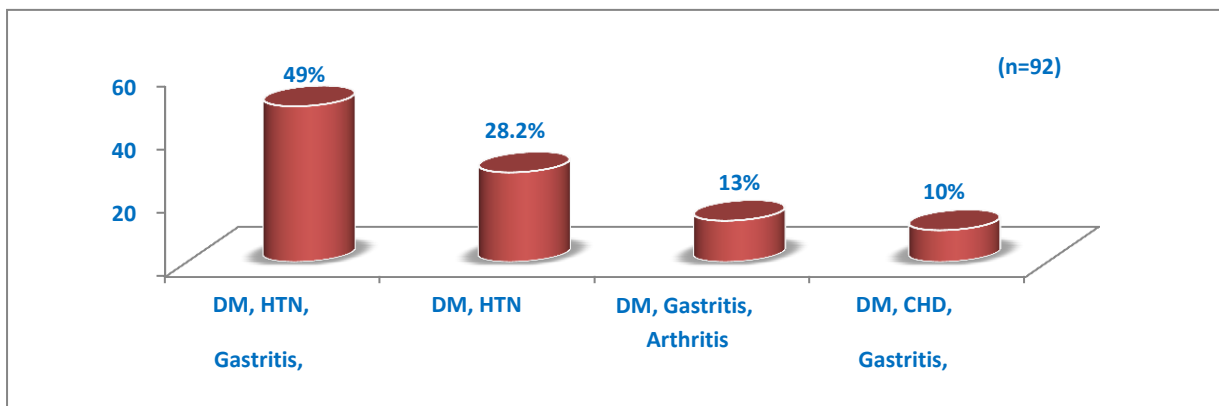
Figure 1: Age wise distribution of the elderly residing in OAH of Mysore city is given in the below figure. Out of 92 subjects 78% were between 60-80% of age and rest 22% were 81-90 years of age. 45.6% were male and 54.3% were female subjects.



Disease History of the elderly residing in OAH

The disease history i.e. the non- communicable disease condition in elderly of both the gender is given in Figure no 2. From the figure it can be observed i.e. 100% of the subjects were suffering from Diabetes, 77% from HTN and 72% were having Gastritis and Arthritis problems.

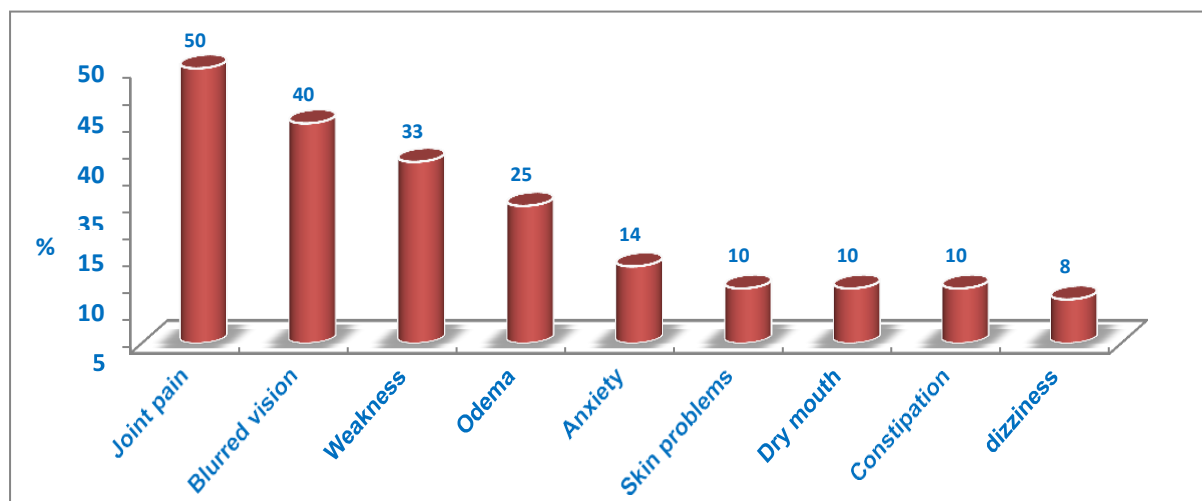
Figure 2: In the given below figure the disease history was shown in the percentage for both the gender of elderly residing in Old Age homes of Mysore City



Clinical signs and symptoms of the elderly residing in OAH

The clinical signs symptoms related to the disease conditions were recorded and shown in the fig no 3. The most common symptoms were found to be joint pain, as many of the subjects were having arthritis. Around 40% were vision problems which may be due to diabetes; oedema may be due to HTN, the rest of the symptoms such as skin problems, constipation, dry mouth, dizziness and constipation were found on the 10-20% elderly.

Figure 3: The figure in the given below represents the clinical signs & symptoms of elderly residing in Old Age homes of Mysore City



Blood pressure of the elderly residing in OAH

Figure 4: The figure given below were the value of the elderly suffered with Blood Pressure, out of 92 subjects 84% elderly were fallen under the category of Hypertension in both the gender. It can be considered as the results of un-proper sodium intake.

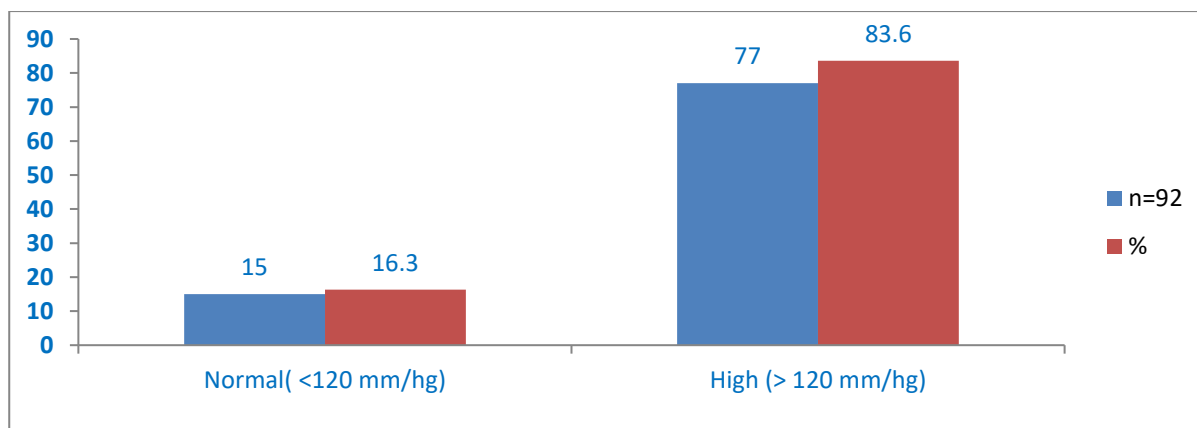
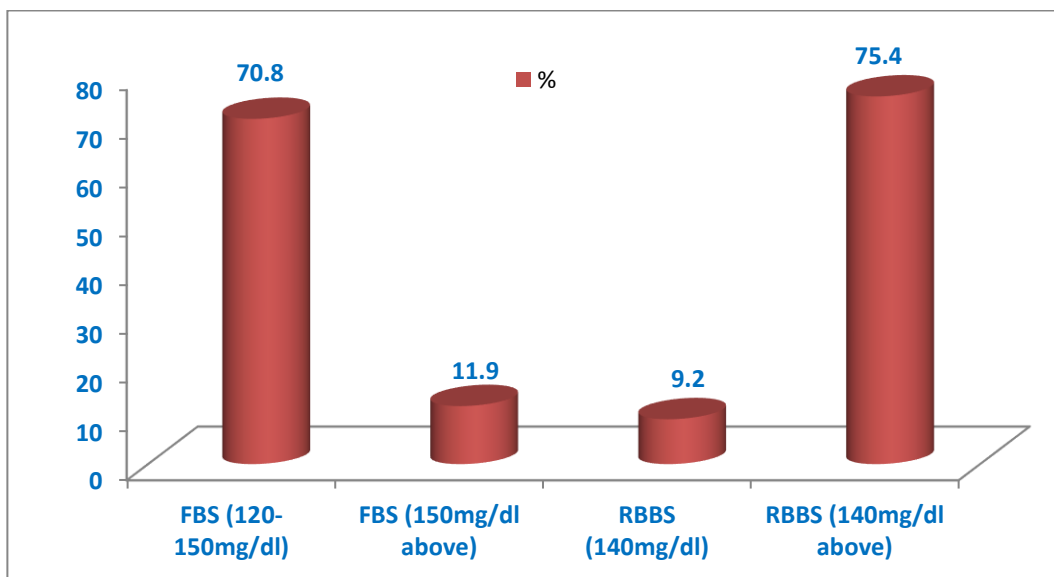


Figure 5: In below given figure of Blood sugar parameters indicate that 11.9% were fallen under the fasting blood sugar category of more than the normal range whereas 75.4% random blood sugar were also from the above range and it shows that it was considered as Hyperglycaemia.



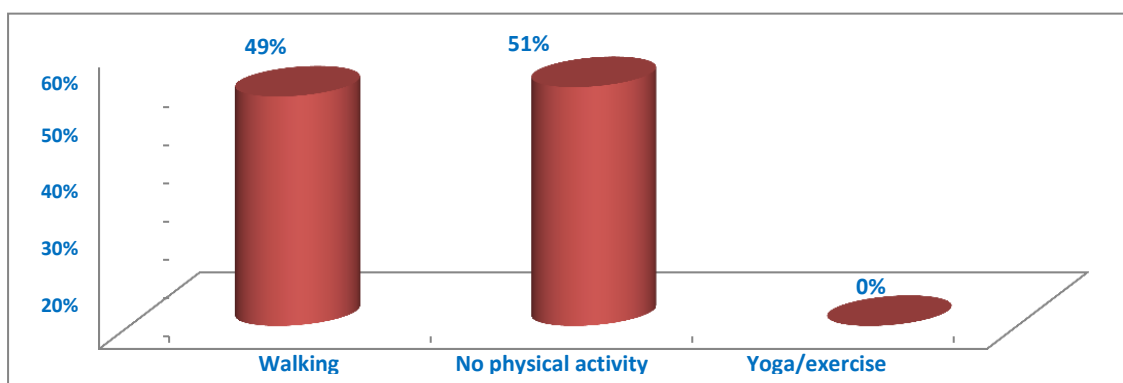
Biochemical parameters of the elderly residing in OAH

The table 1 given below indicate the biochemical parameters of the elderly residing in Old Age homes of Mysore City. Whereas, the results were show accordingly in the form of mean standard deviation and percentage.

Parameters	Mean \pm Stdev (n=92)	(n=92) Normal	High	Low
Cholesterol (<200 mg/dL)	162.5 \pm 32.2	85 (78.2%)	7 (6.44%)	0
Triglycerides(<150mg/dL)	150.7 \pm 25.3	55 (50.6%)	37(34.0%)	0
Albumin (3.4-5.4g/dL)	3.7 \pm 0.5	80 (73.6%)	3 (2.76%)	9 (8.28%)
Calcium (8.8-10.2mg/dL)	8.1 \pm 1.3	30 (27.6%)	3 (2.76%)	54 (49.6%)
Total Protein (6-8.3g/dL)	6.5 \pm 1.0	59 (54.2%)	7 (6.44%)	26 (23.9%)
SGOT (5-40 U/L)	25.2 \pm 7.4	91 (83.7%)	1 (0.92%)	0
SGPT (7-56 U/L)	26.8 \pm 10.6	92 (84.6%)	0	0
Phosphorus(2.5-4.5 mg/dL)	3.4 \pm 0.8	75 (69%)	0	8 (7.36%)
Urea (40-50 mg/dL)	42.5 \pm 5.0	71 (65.3%)	2 (1.84%)	19(17.48%)
ALP (30-120 U/L)	70.9 \pm 24.6	83 (76.3%)	4 (3.68%)	5 (4.6%)
Creatinine(0.7-1.3 mg/dL)	1.05 \pm 0.45	54 (49.6%)	25 (23%)	13 (11.9%)

Physical activity of the elderly residing in OAH

Among physical activity as it is mentioned below in figure no 6, which 49% subjects were doing bricks walking however the time duration of 15mins. Yoga and other physical activity were not performed by the elderly. No such facility was provided by the management. The low physical activity may be due to the reason of oedema or muscle pain.



DISCUSSION: In the OAH, 95% of the elderly are staying without life partner and frequency of children visiting is rare. However, they have to depend on management in minor to major problem related to physiological status. The major findings of the study reveal that the elderly residing in OAH are in need of the regular medical check with guidance and education in management of the chronic disease condition.

One of the foremost objectives of our nation is the improvement of the health and nutritional status of the people. If a country is to be healthy, community or society should be live healthy. Education and counselling in the elderly and management of OAHs are required for the better management. So it is necessary to conduct and give awareness educational programmes on health and nutritional aspects.

As people age there tend to be a concomitant increase in the presence and number of chronic conditions and complications of both physiological and psychological nature. Among people age 60 and older, heart disease, cancer, and other chronic illnesses already account for over 87 percent of health problems globally (Khan et al, 2006).

Older people are prone to chronic diseases of heart, blood vessels, brain, kidney, liver etc., and also have complications of diseases like diabetes. The quality of life of the elderly population depends on their socio-economic characteristics. Ageing affects the social and economic foundations of societies. Present conditions become vulnerable for the aged, because on one side the traditional welfare institutions are deteriorating and on the other side the population of the aged is increasing rapidly. There is a big gap between the problems of the aged and the available resources. The attempt made by the government and nongovernmental organizations are nothing compared to the needs (Lawani and Seeba Thomas, 2012).

CONCLUSION

The report of the previous and current studies strongly suggest modification in the lifestyle of the OAH elderly such as regular health camps, educational programs in an entertainment manners, in related to health care awareness, importance of dietary modification, yoga, meditation in the management of disease condition the participation of the elderly in such program can improve their disease condition and strengthen their physiological status.

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DECLARATION

We have declared that the work described has not been published previously.

CONFLICT OF INTEREST

The authors declare no conflict of interest, financial or otherwise.

ETHICAL APPROVAL

The plan of research work was approved no: (JSSMC/IEC/05/0202/2017-18) by the Institutional Ethical Committee, JSS Medical College, JSS Academy of Higher Education & Research, Mysuru Karnataka.

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