

“A Cross Sectional Study on Food Consumption Pattern and its Relation to Nutritional Status of Old Males (Aged > 60 Years) Living in Institutions and with Families”

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Abstract—Ageing is a normal biological process. Food choice affects healthy ageing and ageing affects food choice. The interplay of older people's food choices and meal patterns with gender substance abuse (especially smoking) and activity (social, mental and physical) contributes to be important for advancing years. Recognizing the importance of assessment of appetite, a cross sectional study was conducted to determine the validity of appetite screening tools namely, the simplified nutritional appetite questionnaire (SNAQ), structured health and lifestyle questionnaire, oral health questionnaire and measures of nutritional status and food intake among geriatrics. Method: The survey was conducted on food consumption pattern of old men (aged > 60 years) living in old age institutions (Little Sister of the Poor, Kolkata) with the one's living with their families. A set of questionnaire including; a structured health and lifestyle questionnaire, oral health questionnaire and a Simplified Nutritional Appetite Questionnaire (SNAQ) was used to obtain data pertinent for the study. A 24 hour dietary recall was also done. Result and Discussion: It was seen that a significantly higher percentage of elderly living in institutions suffer from inadequate diet and malnutrition as compared those living with their families. The incidence of cataract, sensory impairment, neurological problems, gastrointestinal disturbances, oral health and dental problems was also seen in higher percentage in elderly people living in institutions. It can be associated to inadequate care and insufficient funds, depressed food intake and ultimately poor nutritional status. Conclusion: In conclusion, malnutrition and poor appetite were prevalent in elderly people living in institutions. There is a need to regularly include nutritional and appetite assessment for early intervention measures in order to prevent consequence of malnutrition.

Keywords: Ageing, nutritional status, malnutrition, SNAQ.

1. INTRODUCTION

Ageing is defined as a decline in survival and fecundity with advancing age, which is caused by damage to macromolecules and tissues [7]. In India, the number of the elderly population is fast growing. An increasing proportion of elderly people in India and other countries indicate a need for more attention

towards them. According to the United Nations Population Fund, the population of elderly people in India was 90 million. Of the 90 million seniors, 30 million lived alone, and 90 per cent worked for livelihood [3]. Urbanization, modernization and globalization have led to changes in the economic structure and social values. A transition of traditional joint family system to the nuclear families has given rise to the concept of old age homes. There are more than 1012 old age homes in India and their number is continuously increasing. Dramatic changes in life style from traditional to modern have lead to physical inactivity due to technological advance [2].

There is an increasing awareness and evidence that undernutrition is an important modifiable risk factor for poor clinical outcome in older persons in Western society. Based on observational studies, undernutrition is found to be associated with increased morbidity, mortality and a reduced quality of life, even after adjustment for severity of illness [13]. This emphasizes the importance of screening for and subsequently treating undernutrition in older persons.

2. SURVEY DESIGN

Participants: 25 elderly men (aged >60 years) were selected from an old age home (Little Sister of the Poor, St. Joseph's Old Age Home, 2, A J C Bose Road, Opposite Hotel Hindustan International, Kolkata- 700020, West Bengal) and 25 elderly men were selected who lived with their family (Lake Town Complex, 862, Jessore Road, Kolkata- 700055, West Bengal) for the purpose of the study.

Data collection: Selection of quick and easy-to-assess anthropometric and undernutrition related points- that potentially could be included in the set of criteria based on consistency in the literature that assess: 1) undernutrition: BMI and self-reported involuntary weight loss; or 2) risk of

undernutrition: a reduced nutritional intake, or a poor appetite was done.

Appropriate and adequate nutrition of elderly people is of great importance for their general and oral health. Diet plays an important role in preventing disease in the elderly[14].The effect of oral health on food choice and dental health of older men was determined by using a structured Oral health and food choice questionnaire which contained 15 questions.A structured health and lifestyle questionnaire was used to analyse the effect of food choices, lifestyle practices, food beliefs, social status and residence on the food consumption pattern of elderly men (Geriatric Research Unit Bern), which contained 18 questions. A 24 hour dietary recall was also done to check the memory of the subjects as well as to learn about their dietary pattern. SNAQ questionnaire appears to be a useful screening instrument for the early detection of undernutrition in a nursing and residential home setting [11].

3. RESULTS AND DISCUSSION:

1. Body Mass Index (BMI)

Intervention programs that target poor nutritional status could potentially improve overall quality of life. [15] There is a need to protect the human rights of the elderly and have gender just laws and policies to ensure adequate economic and social protection during disability and old age, especially where the aged lack adequate family support. The present study showed that a higher percentage of elderly living in institutions suffer from under-nutrition as compared to the one’s living with their family as shown in Table 1. The causes of unintentional weight loss can be categorized in several ways. The major causes can be as social (poverty, living alone and emotional isolation, poor nutritional knowledge); psychiatric, medical, neurological or esophageal disorders and age-related increase with aging in males [8]. Dietary inadequacies among the elderly may have important health implications as there is a strong association between nutrition and many degenerative diseases [2].

2. SNAQ score & elderly

The SNAQ score determines the nutrition status of an individual. If the SNAQ score of an individual is less than 14 that means his nutritional status is poor and SNAQ score of an individual is more than 14 that means his nutritional status is good.Table1 highlights on the variation in the SNAQ scores.

Thus it was seen that a high percentage of elderly males living in old age institutions have a poor nutrition status, as compared to the elderly males living with their families. The poor nutrition status may be due to poor appetite, ill-fitting partial or complete denture, chewing problems, tooth ache [4] swallowing problem, taste alteration, smell alteration, diseases/ ailments, inadequate nutrition, economic status.

Table1: BMI (Body Mass Index) & SNAQ score of the elderly men

	BMI (Old Men Living In Institutions)	BMI (Old Men Living In Community)	SNAQ (SNAQ Score For Elderly In Institutions)	SNAQ (SNAQ Score For Elderly In Community)
Mean	17.49	20.47	20.47	15
Standard Error	0.44001	0.461063	0.461063	0.562731
Standard Deviation	2.2	2.305	2.305	2.814
Confidence Level(95.0 %)	0.90814	0.95159	0.95159	15

3. Oral Health and malnutrition

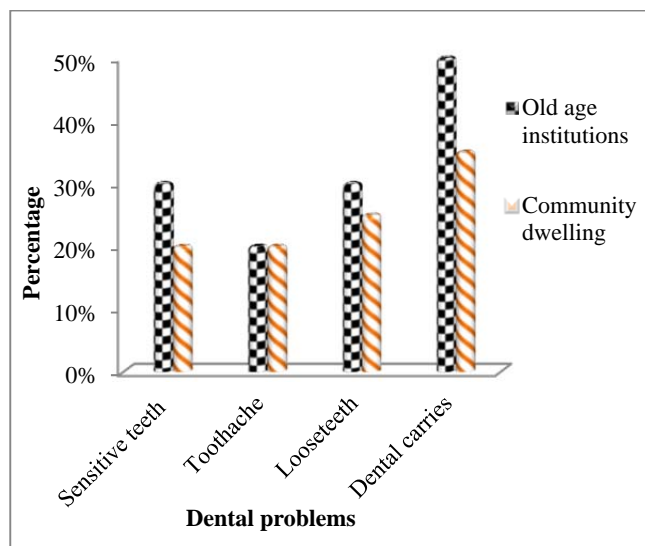


Fig. 2: Major dental problems faced by the elderly males

Fig. 2 shows a comparison between the percentages of dental problems faced by the elderly. With the help of the Oral health questionnaire it was seen that the percentage of teeth loss was high in both but more number of men living in old age institutions have had total teeth loss than the ones living with their families.It was also seen that most of the elderly living in old age institutions do not wear dentures. This was due to inadequate funds, inadequate dental care, deficiency of nutrients, thus preventing them for getting proper treatment, periodontal therapy, fillings, crowns, root canal treatment which leads to weakening of teeth, gums, infections like gingivitis, thus causing loss of teeth, tooth ache [10].

4. Health, Lifestyle and aging

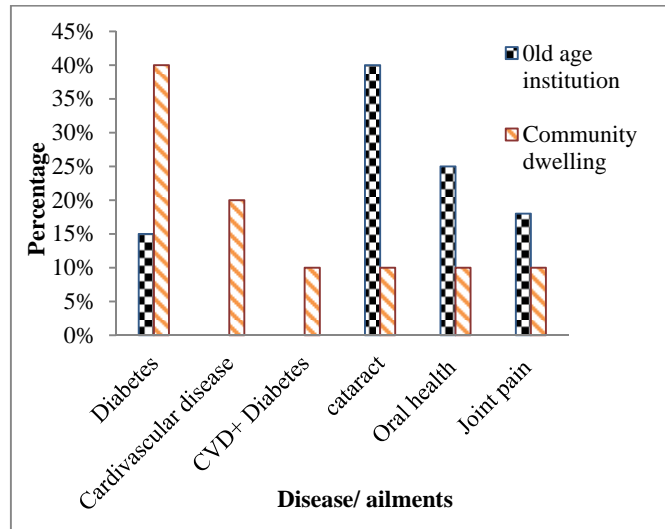


Fig. 3: Disease/ Ailments suffered by the elderly males

With the help of the Health and Lifestyle questionnaire it is seen that higher percentage of older males living in old age institutions suffer more from ailments like cataract, joint pains, oral health problems (dry mouth, teeth decay, mouth sores), Gastrointestinal (GI) disorders (diarrhoea, constipation, indigestion, heartburn), sensory impairment (blurred eyesight, nasal stuffiness, abnormal taste), neurological problems (depression, anxiety, insomnia) as compared to the those living in the community (with their family). This may be due to nutritionally inadequate diet which may lead to under-nutrition, low levels of vitamins and minerals in the body caused due to low intake of fruits, vegetables, milk and milk products, less exposure to sunlight. (Johnson et al., 1998), whereas it was also seen that lower percentage of elderly living in institutions suffer from diseases like diabetes and cardiovascular disease as compared to the those living in the community (with their family). This may be due to high prevalence of overweight among the elderly population living with their families, which might be due to the increasing comforts and sedentary lifestyle, reduction of physical activity [9].

5. Polypharmacy and elderly people

It was also seen that increasing use of drugs among elderly people has lead to negative health outcome, including malnutrition, associated with poly-pharmacy. Studies have shown that olfactory changes occur due to poly-pharmacy; commonly taking five or more prescriptions or over-the-counter drugs, [16] which leads to dry mouth, taste alterations, loss of appetite, gastrointestinal problems, and other alterations in body function, (Hickson, 2006) thus

contributing to poor nutritional status by affecting the eating behaviour and food intake of the elderly.

6. Food Choice & elderly

The survey showed that a high percentage of elderly males living in old age institutions prefer to have soft and goeey foods and avoid some nutritionally dense options such as whole grains, fresh fruits and vegetables, and meats than those living with their families. It can also be seen that food choices largely depend on the type of ailment/ disease suffered by the elderly, their oral health, their socio-economic status and their residence. Also food consumption is largely affected by ill-fitting dentures, absence of dentures, swelling, pain, caries which forces the elderly to consume food that can be easily chewed which does not require much mechanical force, thus they cannot eat all types of food thereby, limiting their food options. Also, the elderly living in old age institutions consumed a monotonous, cyclic meal, while the ones living with their family have a number of options to choose from, as the meal prepared for them was also customized according to their requirements, ailments, their likes and dislikes.

4. CONCLUSION:

The elderly population is extremely diverse, ranging from fit, active, and healthy individuals to extremely frail, totally dependent people with chronic disease and severe disabilities [5]. Older people are at an increased risk of inadequate diet and malnutrition, and the rise in the older population will put more patients at risk. Inadequate diet and malnutrition are associated with a decline in functional status, impaired muscle function, decreased bone mass, immune dysfunction, anaemia, reduced cognitive function, poor wound healing, delay in recovering from surgery, and higher hospital admission and readmission rates and mortality [1].

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