Available online at: http://www.iajps.com   *Research Article*

ANALYSIS OF CHANGES IN THE NUTRITIONAL STATUSES OF EDENTULOUS ELDERLY PATIENTS AFTER NEW DENTURE FABRICATION

Dr Saher Rafique[1], Dr Maryam Hajira[1], Dr Mariyam Usman[1]
[1]Demontmorency College of Dentistry, Lahore

Abstract:
*Introduction: Edentulous individuals consume significantly lower amounts of protein and multiple other nutrients, including fiber, calcium, and some vitamins, because they avoid a number of food types, particularly fresh fruit and raw vegetables and other hard and tough foods, when compared with dentate individuals. **Aims and objectives:** The main objective of the study is to analyse the changes in the nutritional statuses of edentulous elderly patients after new denture fabrication. **Material and methods:** This descriptive study was conducted in Demontmorency College of Dentistry, Lahore during December 2018 to August 2019. Participants will undergo screening to check that they meet the inclusion criteria for the study listed below. Those deemed to be eligible will be asked to give written informed consent for participation in the study before entry into the trial. All patients receive complete denture treatments. **Results:** A total of 200 institutionalized elderly were included in the study, of which 55% were males and 45% were females. The majority of study participants (46%) were between the age group of 65 and 70 years. Only 75 (37.5%) of participants had completed secondary education. The majority of 154 (77%) participants were unskilled, and 46 (23%) of participants were in skilled occupation. **Conclusion:** It is concluded that nutritional status was significantly associated with OHRQOL, and the strong association was found between mean GOHAI and MNA scores and nutrition status and OHRQOL.*

Corresponding author:
Dr. Saher Rafique,
Demontmorency College of Dentistry, Lahore

QR code

Please cite t h i s article in press Saher Rafique et al., ***Analysis Of Changes In The Nutritional Statuses Of Edentulous Elderly Patients After New Denture Fabrication.,*** *Indo Am. J. P. Sci, 2019; 06(11).*

INTRODUCTION:

Edentulous individuals consume significantly lower amounts of protein and multiple other nutrients, including fiber, calcium, and some vitamins, because they avoid a number of food types, particularly fresh fruit and raw vegetables and other hard and tough foods, when compared with dentate individuals. Several lines of evidence show a relationship between increased intake of some macronutrients and micronutrients and a reduced risk of certain illnesses [1]. Most notably, there is strong evidence that a diet high in fruit and vegetables protects against obesity, diabetes, cardiovascular disease, and some cancers. Poorer food intake by edentulous individuals is therefore likely to lead to ill health. Moreover, inadequate nutrient intake because of tooth loss is associated with weight loss, which is a factor in frailty, so edentulous individuals are also at risk of becoming frail [2].

As life expectancy grows globally, the proportion of older adults within the population is set to double between 2015 and 2050 (from 12% to 22%). Whilst this demographic change can be considered to be largely positive, it also brings to light significant nutritional challenges for an aging population group that are particularly vulnerable to malnutrition and age-related disease [3]. Consequently, public health dietary advice and guidelines in some countries are tailored for older adults (for example in the USA, though not in the UK) to help guide them towards the specific nutritional requirements necessary to safeguard or improve health in older age [4].

Aims and objectives

The main objective of the study is to analyse the changes in the nutritional statuses of edentulous elderly patients after new denture fabrication.

MATERIAL AND METHODS:

This descriptive study was conducted in Demontmorency College of Dentistry, Lahore during December 2018 to August 2019. Participants will undergo screening to check that they meet the inclusion criteria for the study listed below. Those deemed to be eligible will be asked to give written informed consent for participation in the study before entry into the trial. All patients receive complete denture treatments. The MNA tests composed of simple measurements and brief questions that can be completed in <10 min: anthropometric measurements (weight, height, and weight loss), global assessment (six questions related to lifestyle, medications, and mobility), dietary questionnaire (eight questions related to number of meals, food and fluid intake, and autonomy of feeding), and subjective assessment (self-perception of health and nutrition). An MNA score >24 identifies participants with good nutritional status. Scores between 17 and 23.5 identify participants at risk of malnutrition. An MNA score <17 reveals protein-energy malnutrition.

Statistical analysis

The data was collected and analysed using SPSS version 20.0. All the data was collected using mean and standard deviation.

RESULTS:

A total of 200 institutionalized elderly were included in the study, of which 55% were males and 45% were females. The majority of study participants (46%) were between the age group of 65 and 70 years. Only 75 (37.5%) of participants had completed secondary education. The majority of 154 (77%) participants were unskilled, and 46 (23%) of participants were in skilled occupation. About 85.0% of participants sometimes had difficulty in eating food because of the problems with dentures. Approximately, 80.0% of participants had trouble biting or chewing any kinds or food such as firm meat or apples, 95.0% of participants were able to swallow comfortably, and 85.5% of participants never had problems in speaking. Nearly, 90% of them had total scores of GOHAI between 12 and 57 which require "needed dental care.

Table 01: Distribution of participants according to the MNA index questionnaire

	Response options	Response *n* (%)
Has food intake declined over the past 3 months due to loss of appetite digestive problem chewing or swallowing difficulties?	Severe decrease in food intake	2 (1.0)
	Moderate decrease in food intake	46 (23.0)
	No decrease in food intake	152 (76.0)
Weight loss during last 3 months?*	Weight loss >3 kg	2 (1.0)
	Does not know	58 (29.0)
	Weight loss between 1 and 3 kg	4 (2.0)
	No weight loss	136 (68.0)
Mobility?	Bed or chair bound	0 (0.0)
	Able to get out of bed	3 (1.5)
	Goes out	197 (98.5)
Has suffered psychological stress or acute disease in past 3 months?	Yes	24 (12.0)
	No	176 (88.0)
Neuropsychological problems?*	Severe depression	2 (1.0)
	Mild dementia	24 (12.0)
	No psychological problems	174 (87.0)
How many full meals does patient eat daily?	1 meal	0 (0.0)
	2 meals	55 (27.5)
	3 meals or more	145 (72.5)
Consumes 2 or more serving of fruit or vegetables/day?*	No	19 (9.5)
	Yes	181 (90.5)
How much fluid (water, juice, tea, milk, coffee, etc.,) is consumed per day?	<3 cups	84 (42.0)
	3-5 cups	111 (55.5)
	5 cups	5 (2.5)
Mode of feeding?	Unable to eat without assistance	0 (0.0)
	Self-fed with some difficulties	26 (13.0)
	Self-fed without any problems	174 (87.0)
In comparison with other people of the same age, how does the patient consider his/her health status?	Not as good	4 (2.0)
	Does not know	138 (69.0)
	As good	48 (24.0)
	Better	10 (5.0)

*$P<0.05$ is significant. MNA=Mini nutritional assessment

DISCUSSION:

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. It has been shown that general health and quality of diet are determined by social support, socioeconomic status, culture, and oral health. A multitude of physical, social, psychological, and biological factors contribute to a person's nutritional health status [5,6]. Almost all these factors are particularly pertinent among older adults. Factors such as poverty, social isolation, poorer mental health, loneliness, and losses of different kinds can affect general health and oral health of the person [7]. Older adults are more likely to experience events such as bereavements or physical disability that affect emotional well-being and can result in nutritional health. Previous studies showed that impaired dental status can cause dietary limitations through chewing difficulty, resulting in impaired nutritional status [8]. Masticatory efficiency is affected by the presence of teeth, the number of functional teeth, and the use of prostheses, which influence the choice of food.

Tooth loss in elderly people has been related to changes in food intake and nutritional deficiency. Diet and dentition are of great importance, due to the significant role of diet in the etiology of common systemic diseases, such as bowel cancer and coronary heart disease, especially in the elderly [9]. As preparing the food for digestion is one of the main functions of dentition, a fundamental research is required for the scientific exploration of the association between dental status and food intake, nutrition, and mastication, especially for the elderly population [10].

CONCLUSION:

It is concluded that nutritional status was significantly associated with OHRQOL, and the strong association was found between mean GOHAI and MNA scores and nutrition status and OHRQOL. Geriatric denture population is particularly vulnerable to compromised nutritional health. As dental prosthetic rehabilitation requires a series of appointment, dietary analysis and counseling can be easily incorporated into geriatric treatment planning.

REFERENCES:

1. Lamy M, Mojon P, Kalykakis G, Legrand R, Butz-Jorgensen E. Oral status and nutrition in the institutionalized elderly. J Dent 1999;27:443-8
2. de Andrade FB, de França Caldas A Jr., Kitoko PM. Relationship between oral health, nutrient intake and nutritional status in a sample of Brazilian elderly people. Gerodontology 2009;26:40-5
3. Patel P, Shivakumar KM, Patil S, Suresh KV, Kadashetti V. Association of oral health-related quality of life and nutritional status among elderly population of Satara district, Western Maharashtra, India. J Indian Assoc Public Health Dent 2015;13:269-73
4. Census of India 2011: Data from 2011 Census Including Cities Villages and Towns. Census Commission of India. Press Information Bureau, Government of India; 2011.
5. Gil-Montoya JA, Subirá C, Ramón JM, González-Moles MA. Oral health-related quality of life and nutritional status. J Public Health Dent 2008;68:88-93
6. Dauchet L, Amouyel P, Hercberg S, Dallongeville J. Fruit and vegetable consumption and risk of coronary heart disease: A meta-analysis of cohort studies. J Nutr 2006;136:2588-93
7. Samnieng P, Ueno M, Shinada K, Zaitsu T, Wright FA, Kawaguchi Y, *et al.* Oral health status and chewing ability is related to mini-nutritional assessment results in an older adult population in Thailand. J Nutr Gerontol Geriatr 2011;30:291-304.
8. Irudaya RS. The National Policy for Older Persons: Critical Issues in Implementation BKPAI Working Paper No. 5. New Delhi, US: United Nations Population Fund (UNFPA); 2011.
9. El Osta N, Hennequin M, Tubert-Jeannin S, Abboud Naaman NB, El Osta L, Geahchan N, *et al.* The pertinence of oral health indicators in nutritional studies in the elderly. Clin Nutr 2014;33:316-21.
10. Rathee M, Singla S, Bhoria M, Kundu R. Role of nutrition assessment and dietary counseling in geriatric denture population – An overview. J Oral Health Res 2015;6:2-4