

Relationship between the dietary habits, Body Mass Index (BMI) and health status in the elderly people living in rural communities of the Western Alps

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Abstract

Because in recent years it was emphasized that the quality of ageing and health depends also on a correct diet we examined the relationship between dietary habits, B.M.I. and health status in alpine populations. We considered some mountain communities of the Western Alps: Venaus, Exilles and Limone Piemonte. We used a questionnaire dealing with alimentary habits, lifestyle and health status of the elderly individuals. Additionally, anthropometric measurements were taken of each subject relative to height and weight in order to calculate the BMI.

With regard to the correlation between diet and pathologies we noted that the examined sample was very sensitive and careful about the diet; in fact, no nutritional deficiencies were recorded.

Introduction

Eating habits in industrialised societies have been changing, and the changes have been both qualitative and quantitative. It is a known fact that a correct diet leads to a state of well-being, whilst an unbalanced alimentation can result in a series of unhealthy states. This lack of balance in the nutritional components is conducive to an increase in body weight capable of causing obesity, thereby predisposing populations to diseases which are metabolic and cardiovascular.

This report that we are presenting sets out to examine the relationship between the composition of diet, BMI (Body Mass Index) and health status in the elderly individuals living in rural communities residing in the Alpine Arc of West Piedmont. The communities studied are as follows: Venaus (Val Cenischia), Exilles (Val di Susa), and Limone Piemonte.

Materials and methods

Our research into their alimentation took into account 195 people, 70 at Venaus, 60 at Exilles, and 65 at Limone Piemonte, and it was based upon questionnaires and interviews. The subjects were of both sexes and of an age, approximately, of 65 years; they belonged to family groups whose origins, and whose settlement in their communities, went back at least three generations.

The interviewees were required to reply to a predefined questionnaire investigating the types of consumed nourishment, and their frequencies each week. Additionally, anthropometric measurements were taken of each subject relative to height and weight in order to calculate the BMI, this index being important for the assessment of body composition, and the analysis of obesity, and also on account of its affording an indication of the level of nourishment.

Results

From a qualitative and quantitative analysis of the foods most frequently consumed it emerged that the supply of energy, of macro and micro nutrients, is, generally-speaking, sufficient for all the people under study. The elaboration of data in which we used OGP software [1], a programme of nourishment education used for calculating errors in nutrition – failed to discover, on the whole, significant defects or excesses in the average intake of nutrients (Tab.1 and Tab.2).

MEN	Average intakes recommended OGP	VENAUS N=30	EXILLES N=28	LIMONE PIEMONTE N=30
Carbohydrates	282g	300.6g	234.9g	268.8g
Proteins	62g	90.2g	71.9g	113.3g
Lipids	70g	77.3g	68.9g	87.8g
Saturated fat	max 28g	30.8g	30.9g	34.4g
Cholesterol	<300mg	316.9mg	287.88mg	432.9mg
Vitamin D	10µg	5.46µg	4.04µg	4.92µg

Calcium	1000mg	1029.2mg	993.2mg	815.3mg
Fe	10mg	16.8mg	13.8mg	13.8mg

Table 1. Average intake of macro-and micronutrients in the male sample

WOMEN	Average intakes recommended OGP	VENAUS N=40	EXILLES N=32	LIMONE PIEMONTE N=35
Carbohydrates	250g	248.1g	248.6g	206.4g
Proteins	53g	83.3g	58.6g	79.4g
Lipids	50g	48.1g	47.9g	60.7g
Saturated fat	max 20g	27.4g	25.8g	22.3g
Cholesterol	<300mg	278.9mg	267.8mg	292.5mg
Vitamin D	10µg	2.7µg	2.9µg	3.5µg
Calcium	1200-1500mg	887.2mg	788.3mg	559.1mg
Fe	10mg	9.8mg	12.8mg	11.5mg

Table 2. Average intake of macro-and micronutrients in the female sample.

There emerged a larger intake of protein and of cholesterol in the masculine sample from Limone Piemonte (respectively 113.3 g and 432.88 mg) as compared with the values recommended in the programme (the differences have in fact proved statistically significant as demonstrated by the T test) and were probably due to the habit of frequently consuming more meat, cheese and butter in their diet.

However, in regard to micronutrients, we note how in all these communities the vitamin D intake is inferior to the daily 10 mg that is recommended [2]. This phenomenon might be explicable due to the fact that these elderly people constitute a group that is at risk on account of an insufficiency of vitamin D, due both to a lack of exposure to the light of the sun, and to the diminished capacity of endogenous synthesis owing to advancing old age. The BMI results that we obtained reveal, for all the communities we examined, a situation in which an excess of weight is very limited (Tab. 3).

VENAUS		EXILLES		LIMONE PIEMONTE	
M N=30	W N=40	M N=28	W N=32	M N=30	W N=35
25.4	23.7	25.5	24.2	25.6	23.4

Table 3. The BMI results

We have examined the relationship existing between the macronutrients consumed and the BMI results of the samples under examination. An elaboration of the data reveals only one positive correlation between the cholesterol total and the BMI (Pearson:R =0.463; P= 0.023) – this is the one found in the case of the male sample from Limone Piemonte.

Discussion

A correct nutritional discipline, based upon a balanced diet, and complete with all the essential nutrients, plus an adequate quantity of physical exercise, are closely correlated to our state of health and longevity. Our analysis of alimentary behaviour and of BMI has not evidenced nutritional defects, nor disturbing factors of risk for pathologies either of a cardiovascular or a metabolic nature.

A comparison with the data appearing in the literature on similar samples of persons of age superior to seventy has demonstrated that these populations enjoy improved conditions of health [3].

Acknowledgments

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