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STAGES OF CHANGE TOWARDS HEALTHY EATING BY PORTUGUESE SENIOR POPULATION

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1. Introduction

As eating is a bio-social and cultural phenomenon, the promotion of healthy ageing through healthy eating is more likely to be effective if based on the understanding of the beliefs and needs of the elderly.

Any efforts to change eating behaviours, namely by community-based interventions involving self-management approaches, must take into account the individuals' self-perceived motivations and barriers to food selection (Herne, 1995, Locher, 2009).

Globally, the number of older adults is growing rapidly, namely in European countries which are considered to have an "aged population". In Europe every seventh person is aged 65 years or more, and this proportion is growing while the proportion of children is declining. The ageing process is more advanced in countries like Portugal, than in other western parts of Europe (World Health Organization, 2008; INE, 20111).

We aimed to understand how the Portuguese elderly perceive themselves in relation to the adoption of healthy eating habits according to their sociodemographic characteristics.

2. Methods and sample

This project was carried out within the "Portuguese Population's Food Habits and Lifestyles". This study was designed and promoted by Sociedade Portuguesa de Ciências da Nutrição, with the support of Nestlé, within a protocol of scientific sponsorship between the two institutions. A national representative sample of 712 Portuguese citizens aged plus than 65 years, living in their own homes, were interviewed in a face to face situation. Subjects were assigned into five different categories according to Transtheoretical Model developed by Prochaska et al (Prochaska, 1992). In this model health related behaviour change occurs through separate stagesIn this model it is assumed that health related behaviour change occurs through separate stages: Precontemplation (do not consider any changes), Contemplation (consider changes), Decision (make plans to change), Action (carry out the changes) and Maintenance stage (maintained changes for more than six months). An additional group was identified: Relapse, corresponding to those who have quit healthy eating (de Graff C, 1997).
The data's descriptive analysis, was followed by univariate and multivariated analysis (logistic regression analysis was used to calculate odds ratio) to characterise the study's sample according to the defined objectives. Due to the small number of subjects in the contemplation, decision and action stages, only data from maintenance groups will be analysed. We decide also to join the precontemplation and relapse subjects and analise them in the same way.

3. Results

Most seniors (63,7%) considered themselves to have healthy eating habits followed by those who stated that they were in the decision (9,8%) and in the precontemplation stages (7,6%) (Table 1).

Table 1. Distribution of Portuguese over all stages of change (%)

	n=698 (%)
Precontemplation	53 (7,6%)
Contemplation	36 (5,1%)

Decision	69 (9,8%)
Action	48 (6,9%)
Maintenance	444 (63,7%)
Relapse	48 (6,8%)

The subjects characteristics in each stage of change can be observed in Table 2 and 3.
Women were more likely to be in the maintenance stage (65,2% and OR=1,23) as well as widows (69.1% and OR=1.19) and older elderly group (66,1% and OR=1,63). Looking at geographical area of residence, elderly living in the North, in Açores and in Madeira were also more likely to be in the Maintenance stage group (81.5%, 72,0%). Men and those with lower education level were found to be in the precontemplation stage (10,7% and 10,9%, repectively). In the relapse stage we found mainly women, older, with lower education level, widows and living in Centro region of Portugal.

Table 2. Distribution of Portuguese respondents over all stages of change for sociodemographic groups (%)

	Precontempl.	**Contemplation**	**Decision**	**Action**	**Maintenance**	**Relapse**
Sex						
Male	10,7	6,4	9,7	6,4	61,4	5,4
Female	5,2	4,2	10,0	7,2	65,2	8,0
Age (y)						
65-75	5,6	5,3	11,8	8,5	62,6	6,2
+75	13,3	4,4	4,4	2,8	66,1	8,9
Education						
Less than primary	10,9	2,4	10,9	6,3	57,5	12,1
Primary	4,5	3,8	6,4	7,5	70,9	6,8
Plus primary	9,0	9,5	7,7	8,1	62,9	2,7
Marital Status						
Married/cohabiting	6,3	7,3	13,0	7,6	59,5	6,3
Widow	8,2	3,5	5,0	6,8	69,1	7,6
Single/divorced	10,5	3,9	15,8	5,3	56,9	6,6

Geographical region of Portugal						
North	0,9	3,2	4,5	7,7	81,5	2,3
Center	10,0	5,7	2,9	7,1	62,1	12,1
Lisbon Area	9,9	6,9	21,5	7,7	46,4	7,7
Alentejo+Algarve	14,1	5,1	3,8	3,8	64,1	9,0
Açores+Madeira	12,0	4,0	8,0	0	72,0	4,0

Those in the precontemplation/relapse stages were more likeely to be men and older, and less likely to live in the North compared to Alentejo or Algarve (OR 16,84), Açores or Madeira (OR 13,25), in the Centre (OR 10,69) or in the Lisbon area (OR 9,8).

Table 3. Effects of various factors on risk (odds ratio) of precontemplation plus relapse and maintenance stages of dietary change

	Precontemplation and repalse	**Maintenance**
Gender		
male (ref)	*1**	*1*
female	0,42	1,23
Age		
65-74 (ref)	1*	1*
≥75	1,98	1,63*
Education		
Less then primary (ref)	*1*	*1**
primary	0,55	2,16*
more than primary	1,45	1,55
Marital status		
single and divorced (ref)	*1*	*1**
maried/cohabiting	0,4	0,72
widow	0,58	1,19
Geographical area of Portugal		
North (ref)	*1**	*1**
Centro	10,69*	0,40*
Lisbon area	9,80*	0,19*
Alentejo+Algarve	16,84*	0,36
Açores+Madeira	13,25*	0,52
*Logistic regression analysis was used, with all the other variables included in the model		
p<0,05		

4. Discussion and conclusion

The stages of change model is an important tool in understanding differences in attitudes towards health eating habits and it can be a base for effective interventions in senior populations in Portugal.

In a previous study, there was a higher proportion of precontemplative subjects in Portugal (64%) compared to other European countries like Finland (20%), Sweden (30%) or Austria (36%). Germany and Spain had similar proportion of precontemplative subjects (63%, 62%). Citizens from Scandinavian countries were more likely to be in the maintenance stage (de Almeida MDV et al, 2001; Institute of European Food Studies, 1996; de Graff et al, 1997). As in the present study men, less educated were found to be more at risk of precontemplative behaviours. On the other side, women and older subjects were more frequently found in the maintenance stage.

Most portuguese elderly believe they already follow a healthy diet. Believing that one follows a healthy diet may in fact constitute a barrier for healthy eating if that is not the case.

Therefore such beliefs need to be investigated in conjunction with food intake assessment in order to determine how healthy is the diet of these elderly.

Changing lifelong unhealthy habits can have a positive impact on health for the quality of life in older adults, and therefore specific stage-based strategies are recommended to be taken in consideration for intervention in elderly groups.

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