Oral hygiene: reality of a population of institutionalized elders

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Introduction

The poor oral hygiene (OH) among institutionalized elders and consequent accumulation of bacterial plaque may lead to an increased risk for developing oral pathology and also other conditioning situations of systemic health.

Objectives

OH evaluation conditions in an institutionalized elder population and determination of bacterial plaque presence.

Methods

Observational, cross-sectional, descriptive study, with 372 individuals 60+ years old residents in 22 homes of the Porto District, randomly selected (clusters). Descriptive and inferential analysis using SPSS© vs.17.0 with α=0.05. Multivariable logistic regression (backward stepwise method, p=0.05/p=0.10 for factor inclusion/exclusion).

Results

Mean age was 78.8 (± 9.1) years, 69.9% were women, (Table 1) 30.4% had no schooling and 81.7% were completely independent regarding OH procedures.

Table 1 - Age distribution of sample population (according to gender and all), indicating the most relevant statistics (mean and standard deviation (SD), median and percentiles (25 and 75), minimum and maximum.

Age (years)		n	%	Mean (±St.dv)	Me (P25-P75)	Min-Max	p
60-65		43	11.6				
66-75		75	20.2				
76-84		156	41.9				
≥ 85		98	26.3				
All		372	100	78.8 (± 9.1)	80 (73-85)	60-**101**	
Gender	F	260	69.9	79.3 (± 8.8)	81 (74-85)	60-101	0.125
	M	112	30.1	77.7 (± 9.7)	79 (71-84)	60- 98	

Table 2 – Statistical description measures of the plaque index of Silness and Löe.

Plaque Index	n	%	Mean (±St.dv)	Me (P25-P75)	Min-Max
All	234	100	2.2 (± 0.8)	2.2 (2-3)	0-3

The plaque index of Silness and Löe, presented average value of 2.2 (±0.8) (Table 2) and 4 (1.7%) elders were registered with no bacterial plaque (Table 3).

Table 3 - Plaque Index observed in the elders and inference to the population (95% CI).

Plaque Index	n (%)	95% CI
Absence of plaque	4 (1.7)	0.4%-3.0%
Not visible plaque	27 (11.5)	8.3%-14.7%
Moderate accumulation of plaque	85 (36.3)	31.4%-41.2%
Abundant accumulation of plaque	118 (50.4)	45.3%-55.5%
Total	234 (100.0)	

Table 4 - Distribution of daily brushings of the dentate elders.

Number of daily brushings	Number of dentate subjects	
	n	%
0	100	38.9
1	72	28.0
≥ 2	85	33.1
Total	257	100.0
Not applicable	115	

38.9% do not brushed the teeth (Table 4). The gender and degree of independence were related to the number of daily brushings (Table 5 and 6), age has not shown this relationship. 71.1% do not brushed and said "do not need to do".

Table 5 - Relationship between gender and number of daily brushings of the dentate subjects.

Number of daily brushings	Gender				
	Female		Male		
	n	%	n	%	p
0	54	32.7	46	50.0	
1	50	30.3	22	23.9	0.023
≥ 2	61	37.0	24	26.1	
Total	165	100	92	100	

Table 6 - Number of daily brushings performed by dentate and correlated with the degree of independence.

Number of daily brushings	Degree of independence				
	Independent		Dependent		p
	n	%	n	%	
0	78	35.3	22	61.1	
1	66	29.9	6	16.7	0.013
≥ 2	77	34.8	8	22.2	
Total	221	100.0	36	100.0	

From the multivariate analysis (Table 7) it was concluded that the presence of visible bacterial plaque is associated only with the number of brushings performed, and two or more brushings per day reduce the probability of having visible plaque by 67.7%.

Table 7 - Predictors of presence of visible plaque for institutionalized elders (toothed), identified by multivariate logistic regression* (n = 206). The model correctly predicts 86.4% of cases.

Covariable	Category	p	OR	95% CI for OR
Number of daily brushings	0	0.108	1	
	1	0.298	0.536	0.165 – 1.735
	≥ 2	0.039	0.323	0.111 – 0.942
	Constant	<0.001	12.600	

* Variables that entered the regression model: age (years), gender, level of education and degree of independence, date of last visit, number of brushings / day.
Adjusted model: -2 Log likelihood = 158.9; R^2Cox & Snell = 0.023; R^2Nagelkerke = 0.042. CI: confidence interval. OR: odds ratio.

Conclusions

The oral health conditions observed are relevant to invest on preventive programs of oral health promotion, with a base of information addressed to the populations.

Clinical implications

The evidence does lead us to state that, in these populations, there is an increased need to control the bacterial plaque therefore preventing the risk of associated pathology.

Keywords: oral hygiene, plaque index, daily brushings, bacterial plaque, elderly and oral health, institutionalized elderly