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MÉTODOS PARA UM MUNDO EM TRANSFORMAÇÃO

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# **Depressive symptoms and untreated dental caries in older independent-living South-Brazilians**

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***The importance of psychologic reactions in modifying oral health behaviors and salivary immunity has been shown previously, but few studies assessed whether psychologic reactions are associated with caries in populations.***

***Objective: to evaluate the association between depression symptoms and untreated dental caries using a hierarchical approach based on the conceptual framework of caries in populations proposed by Holst et al (2001).***

# Depression and dental caries in older persons

## METHODS:

Population of Carlos  
Barbosa in 2000: 20519

Random Sampling  
based on city registers



**METHODS: Sampling**

**74.5% of the households supplied with fluoridated water**

**2167 in the city register with 60 or + years:**

1 moved away  
9 died before contact  
22 lived in a long-term residence  
113 were not located

**983 contacted:**

872 took part  
785 finished the study protocol  
390 had at least one tooth

## METHODS: Representativeness

**Table 1.** Socio-demographic characteristics of study participants and of the population of persons aged 60 years or more in Carlos Barbosa, Brazil.

		Participants	Population	p
Age	<i>60-64 years</i>	N=304 (34.8%)	N=729 (33.7%)	0.94
	<i>65-69 years</i>	N=212 (24.3%)	N=512 (23.6%)	
	<i>70-74 years</i>	N=188 (21.6%)	N=405 (18.7%)	
	<i>75-80 years</i>	N=95 (10.9%)	N=304 (14.0%)	
	<i>80 or more years</i>	N=73 (8.4%)	N=217 (10.0%)	
Gender	<i>Male</i>	N=309 (35.4%)	N=907 (41.7%)	0.31
	<i>Female</i>	N=563 (64.6%)	N=1267 (58.3%)	
Marital Status	<i>Married</i>	N=623 (71.6%)	N=1332 (67.7%)	0.54
	<i>Divorced/widowed</i>	N=247 (28.4%)	N=636 (32.3%)	
Geographic localization	<i>Urban</i>	N=418 (47.9%)	N=1131 (51.9%)	0.57

## **METHODS: Measures**

### **Face-to-face interviews:**

1. Informed Consents;
2. Structure questionnaire;
3. Self-perceived oral health (Likert scale);
4. Oral hygiene self-care;
5. GDS-15.

### **Oral Examinations:**

1. VPI;
2. Dental status (DMFT);
3. Unstimulated saliva (Spit method).

**METHODS: Statistical Analyses**

**Univariate:**

Chi-square

Student-t or Mann-Whitney

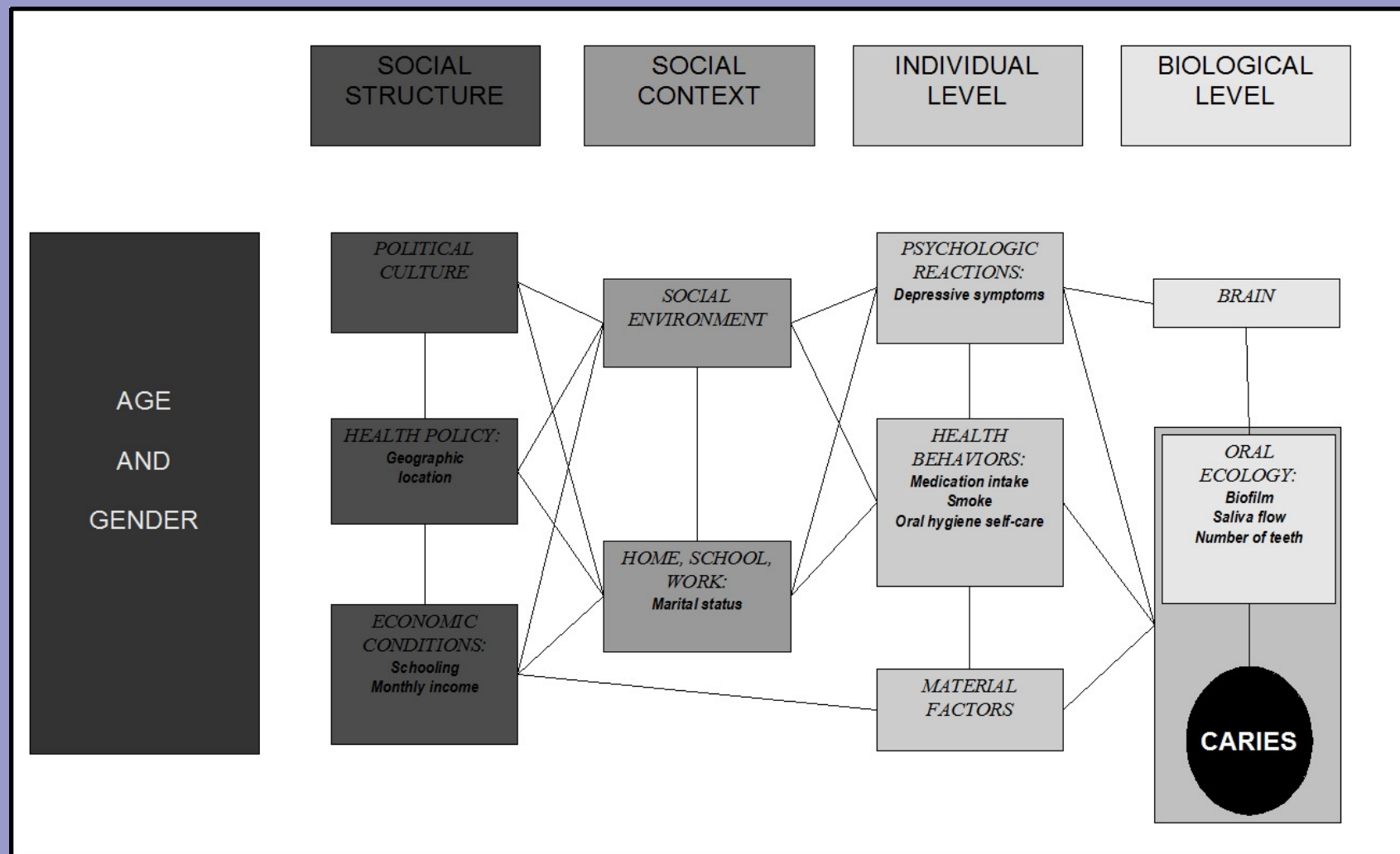
**Reproducibility:**

Cohen's Kappa

Cronbach's Alpha

## METHODS: Statistical Analyses

### Hierarchical model – Outcome: $D > 0$



**Table 1. Characteristics of the sample in respect to the studied outcome.**

Level			D=0	D>0	P
	<i>Age</i>	In years	65.60 (±6.08)	67.00 (±6.09)	0.52
	<i>Gender</i>	Male	N=72 (46.2%)	N=127 (54.3%)	0.12
		Female	N=84 (53.8%)	N=107 (47.5%)	
<b>Social structure</b>	<i>Schooling</i>	>4 years	N=51 (32.7%)	N=65 (27.8%)	0.31
		≤4 years	N=105 (67.3%)	N=169 (72.2%)	
	<i>Monthly income</i>	>R\$260.00	N=72 (46.2%)	N=115 (49.1%)	0.60
		≤R\$260.00	N=84 (53.8%)	N=119 (50.9%)	
<b>Social context</b>	<i>Geographic location</i>	Rural	N=40 (44.9%)	N=114 (48.7%)	0.46
		Urban	N=86 (55.1%)	N=120 (51.3%)	
	<i>Marital status</i>	Married	N=124 (79.5%)	N=187 (79.9%)	1.00
		Others	N=32 (20.5%)	N=47 (20.1%)	
<b>Individual level</b>	<i>Oral hygiene self-care</i>	⇒2/day	N=109 (69.9%)	N=153 (65.4%)	0.38
		<2/day	N=47 (30.1%)	N=81 (34.6%)	
	<i>Medication intake</i>	<2/day	N=83 (53.2%)	N=106 (45.3%)	0.15
		⇒2/day	N=73 (46.8%)	N=128 (54.7%)	
<b>Oral ecology</b>	<i>Smoke</i>	Former/never	N=142 (91.0%)	N=215 (91.9%)	0.99
		Current	N=14 (9.0%)	N=19 (8.1%)	
<b>Oral ecology</b>	<i>Depressive symptoms</i>	Absent	N=144 (92.3%)	N=202 (86.3%)	0.07
		Present	N=12 (7.7%)	N=32 (13.7%)	
	<i>Biofilm – VPI</i>	1 <sup>st</sup> quartile	N=48 (30.8%)	N=49 (21.0%)	0.03
		2 <sup>nd</sup> quartile	N=31 (19.9%)	N=67 (28.8%)	
3 <sup>rd</sup> quartile		N=32 (20.5%)	N=63 (27.0%)		
4 <sup>th</sup> quartile		N=45 (28.8%)	N=54 (23.2%)		
<b>Oral ecology</b>	<i>Saliva flow</i>	⇒0.1 ml/min	N=99 (63.5%)	N=164 (70.4%)	0.18
		<0.1 ml/min	N=57 (36.5%)	N=69 (29.6%)	
<b>Oral ecology</b>	<i>Number of teeth</i>		8.07 (±5.87)	11.19 (±6.86)	0.001

## RESULTS

**Table 7. Risk indicators for caries following a hierarchical approach in independent-living older persons from Carlos Barbosa, South Brazil.**

			D>0
			OR and 95% CI
<b>Individual level</b>	<i>Depression symptoms</i>	Presence	2.25 (1.09 to 4.66) P=0.03
<b>Oral ecology</b>	<i>Biofilm – VPI</i>	2 <sup>nd</sup> quartile	2.96 (1.58 to 5.54)
		3 <sup>rd</sup> quartile	2.62 (1.40 to 4.90)
		4 <sup>th</sup> quartile	2.31 (1.21 to 4.42) P=0.003
<b>Number of teeth</b>			1.10 (1.06 to 1.15) P=0.001

**DISCUSSION**

Depressive symptoms effects on health behaviors and immunity

Fluorides, dental plaque

Limitations and future studies

***Depression and dental caries in older persons***



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