

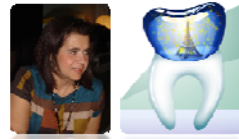
# ICDAS CLINICAL REPORT: CARIES EXPERIENCE AND RESTORATIVE INTERVENTIONS BY VISUAL EXAMINATION

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**INTRODUCTION:** The International Caries Detection and Assessment System (ICDAS) categorize dental caries/restorations and can be applied in Dental Medicine (DM) education, clinical practice, clinical and epidemiology research.

**OBJECTIVE:** This trial evaluated dental caries experience/severity and restorative interventions by ICDAS, in a population of university DM services.

**MATERIAL AND METHODS:** Observational, transverse and descriptive study; random sampling: 284 individuals aged  $\geq 18$  years, attending the 1st dentistry appointment at the Faculty of Health Sciences, University Fernando Pessoa, over a period extending from September-2008 to July-2010. The intra-oral (visual/tactile) ICDAS record was validated by four examiners trained/calibrated (ICC=0.963) to identify the restorative and dental caries clinical (non-cavitated and cavitated carious lesion) conditions. Descriptive/inferential statistical analysis ( $\alpha=0.05$ ) was conducted.

**RESULTS:** In the sample the majority of the participants (70.1%) were aged between 20 and 59 years old (Table 1), 64.8% were female and the overall average ( $\pm$ St.Dev) age was 44.3 ( $\pm$ 16.4) years with no significant differences (t-test,  $p=0.110$ ) between genders (Table 2).

**TABLE 1 – Sample distribution regarding age and gender.**

AGE	n	%	GENDER			
			Female		Male	
	n	%	n	%	n	%
< 20 years	29	10.2	18	9.8	11	11.0
20-39 years	98	34.5	57	31.0	41	41.0
40-59 years	101	35.6	70	38.0	31	31.0
$\geq 60$ years	56	19.7	39	21.2	17	17.0
<b>All</b>	<b>284</b>	<b>100.0</b>	<b>184</b>	<b>100.0</b>	<b>100</b>	<b>100.0</b>

**TABLE 2 – Sample age and gender characterization**

GENDER	n	%	AGE (years)			p (t-test)
			Average ( $\pm$ St.Dev)	Median (P25- P75)	Min-Max	
Female	184	64.8	45.5 ( $\pm$ 16.2)	44 (34-58)	18-84	0.110
Male	100	35.2	42.1 ( $\pm$ 16.6)	40 (28-56)	18-76	
<b>All</b>	<b>284</b>	<b>100.0</b>	<b>44.3 (<math>\pm</math>16.4)</b>	<b>43 (31-58)</b>	<b>18-84</b>	

**TABLE 3 – Descriptive analysis of the dental caries lesions (dental tissues affected) / dental hard tissues restoration, using ICDAS scores.**

Classification on caries lesions, severity stages and affected structure, and dental restorations (ICDAS scores)	Surfaces/person Average ( $\pm$ St.Dev)	Clinical diagnosis of dental hard tissues regarding caries lesions and dental restorations	Sample Prevalence %
Primary caries, non-cavitated lesions in enamel (01-03)	5.6 ( $\pm$ 8.5)	Non-cavitated decayed surfaces	49.3
Primary caries, cavitated lesions in dentin (04-06)	3.6 ( $\pm$ 4.3)	Cavitated decayed surfaces	51.8
Primary caries, lesion in enamel and/or dentin (01-06)	9.1 ( $\pm$ 11.8)	Non-cavitated and cavitated decayed surfaces	52.5
Surfaces restored with definitive material (30, 40, 50, 60, 80)	9.2 ( $\pm$ 13.2)	Restored dental surfaces	53.2
Secondary caries lesion in enamel	0.7 ( $\pm$ 2.1)	Secondary caries in enamel surfaces (non-cavitated)	31.0
Secondary caries lesion in dentin	1.0 ( $\pm$ 1.2)	Secondary caries in dentin surfaces (cavitated)	33.5
Secondary caries lesion in enamel and/or dentin	1.7 ( $\pm$ 2.9)	Secondary caries surfaces (enamel and dentin)	42.6
Dental surfaces present in the oral cavity	118.7 ( $\pm$ 81.7)	Total number of observed dental surfaces	n = 33700

In average, 118.7 ( $\pm$ 81.7) tooth surfaces/individual were observed (Table 3). Decayed surfaces were: 9.1( $\pm$ 11.8) with primary caries, of which 5.6 ( $\pm$ 8.5) were non-cavitated lesions (enamel); of those 0.15 ( $\pm$  0.97) had fissure sealants and 3.6 ( $\pm$ 4.3) were cavitated (dentin). Surfaces restored with definitive material: 9.2 ( $\pm$ 13.2). There were secondary caries in 1.7 ( $\pm$ 2.9) surfaces; Secondary caries in enamel and dentin occurred at 0.71 ( $\pm$ 2.11) and 1.0 ( $\pm$ 1.2) surfaces, respectively. The population dental surfaces' condition was: 56.3% healthy, 52.5% with caries (51.8% cavitated lesions (dentin) and 49.3% non-cavitated lesions (enamel)), 53.2% restored, but 42.6% had secondary caries (33.5% cavitated and 31% non-cavitated lesions).

## DISCUSSION AND CONCLUSIONS

The ICDAS clinical report revealed high experience/severity of dental caries and restorative interventions, but variable values when analyzing the individual and the population. Trials that include registration of caries activity are needed in order to define individual/population risk. The ICDAS assessment allows the definition of more accurate preventive/restorative decisions in clinical practice and clinical and epidemiological investigations.

### KEYWORDS

Dental caries, caries prevalence, caries severity, restoration.



**BIBLIOGRAPHY** ICDAS: *International Caries Detection and Assessment System*. <http://www.icdas.org> [15/06/2012]