CARIOLOGY TEACHING IN LATIN AMERICA (LA)

The ‘University’ Critical View

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1. **Cariology**: Why are we still studying caries?
   - Concepts about Cariology: What has been used to be? What should be?

2. What, How **Cariology** has been taught in LA?

3. Dichotomies on **Cariology** Teaching
   - The archaic dental departments and curriculum framework

4. How **Cariology** should be taught?

5. Dichotomy between **Cariology** teaching and practices

6. Teaching **Cariology** and Changing Paradigms

7. Conclusions
..a new idea or concept ‘does not triumph by convincing the opponents and make them see the light, but rather because its opponents eventually die, and a new generation grows up that is familiar with it’

Max Planck, 1940
Cariology = The study of dental caries

• What has been studied?
  - The disease?
  - Its causes?
  - The diagnostic?
  - The prevention?
  or
  - The treatments?

1986-2008 Textbooks evolution
1986
“In recent years it has been become evident that dental caries can only be prevented, if the dental profession has a thorough knowledge of the Biological variables influencing the disease pattern”

Thylstrup & Fejerskov. *Textbook of Cariology*

1994
“Cariology is the discipline within stomatology which deals with the complex interplay between the oral fluids and the microbial deposits in relation to subsequent change in the dental hard tissues.”
“It is not merely a theoretical and academic exercise, but it is central in any attempt to Manage dental caries that be at community level or individuals in the dental office.”

Thylstrup & Fejerskov. *Textbook of Clinical Cariology*
We hope that the scientific evidence and experience presented in the book enable the reader to perform evidence-based dental care within the field of Cariology and Restorative Dentistry

Fejerskov & Kidd. Dental caries: The disease and its clinical management

It is our hope that this book prepare the reader to become a less dogmatic and more knowledgeable Health Professional who strives to Control dental caries in the most cost-effective way


..in conclusion: Cariology studies the biological factors of dental caries! ...
..Cariology should be the study of dental caries as a disease...

1. The causes: Which is or are?
   - Bacteria infectious disease?
   - A bacteria transmittable disease?
   - A biofilm (plaque) disease?
   - A biofilm sugar-dependent disease?
   - Lack of fluoride?
   - A multifactorial, complex disease?
   - A biosocial disease?
Dental caries as a disease...

2- The diagnosis: How?

- Tactil instrument?
- Visual?
- VisuTactil (“Sharp eyes & blond explorer”)?
- Electronical instruments (lasers, etc)?
- Social Instruments (Who is sick?)
  . The 36? The individual or the society?
3- The prevention
- Which level?
  - Community Health? Individual?
- Using what?
  - Fluoride?
  - Vaccine?
  - Sugar restriction?
  - Biofilm control?
4- The treatment: How?
- Operatively (Invasive)?
  . How much? (Mini-Invasive, μInvasive..?) --
- Not Invasive
  . Controlling biofilm?
  . Using Fluoride?
2- WHAT, HOW CARIOLOGY HAS BEEN TAUGHT IN LA

- No data about LA, 1 publication about NA


- 66% respondents from 65 Dental Schools
- Marked variations in the teaching
- Cariology was not promoted as predicted 20 years ago
- Programs lack of details and depth
- Only 3 schools had a separate department or discipline of Cariology

“The fact that Cariology is not a recognized specialty in North America may also contribute to the lack of attention in this area”
2- WHAT, HOW CARIOLOGY HAS BEEN TAUGHT IN LA

- In LA there are ~ 300 dental schools and my first view doing an internet search is:

  - Most of them have an archaic framework of departments or disciplines
  - With very few exceptions, teaching of Cariology is not integrated, the subject is taught by several disciplines

“In Brazil there are 23 dental specialties and Cariology is not a recognized one but there are 2 specialties dealing with dental caries, Operative Dentistry and Dentistica”

...I presume..
3- DICHOTOMIES ON CARIOLOGY TEACHING

- Are we in LA in the **surgical** (Restorative Dentistry) age?

![Diagram](image)

**DICHOTOMY BETWEEN RESTORATIVE DENTISTRY & PREVENTIVE DENTISTRY**

a) One discipline is responsible for the **invasive treatment** and the other for the **prevention**

b) **Prevention** is not part of the **treatment** of caries, it is a philosophy!
3- DICHTOMIES ON CARIOLOGY TEACHING

• Are we in LA in the biological (Cariology) age?

DICHTOMY BETWEEN RESTORATIVE DENTISTRY & PREVENTIVE DENTISTRY & CARIOLOGY

a) Cariologist does research
b) DDS practices
3- DICHOTOMIES ON CARIOLOGY TEACHING

• Are we in LA in the social (“causes of causes”) age?

DICHOTOMY BETWEEN RESTORATIVE DENTISTRY & PREVENTIVE DENTISTRY & CARIOLOGY & SOCIAL DENTISTRY

a) DDS treats caries
b) Cariologist does research about caries
c) Dental Health Professional discuss caries
The teaching of Cariology should be done on the best understanding of what is known about the etiology and pathogenesis of dental caries so that diagnosis, prevention and control of lesion progression, as well as decisions about when and how to perform restorative treatments, can be made based on comprehensive knowledge of the disease and its different manifestations.

F&K 2003
## 5- Dichotomy between Cariology teaching and practice

### Periodontology vs. Cariology

<table>
<thead>
<tr>
<th><strong>Periodontology</strong></th>
<th><strong>Cariology</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>It was born in 1965</td>
<td>1980?</td>
</tr>
<tr>
<td>Disease of one (?) cause</td>
<td>“Complex”</td>
</tr>
<tr>
<td>It is a discipline</td>
<td>not yet</td>
</tr>
<tr>
<td>It has identity</td>
<td>Biological!</td>
</tr>
<tr>
<td>Teaching &amp; Practice</td>
<td>Split</td>
</tr>
<tr>
<td>Dental Specialty</td>
<td>Not</td>
</tr>
<tr>
<td>Periodontics</td>
<td>?</td>
</tr>
</tbody>
</table>
6- Teaching Cariology and Changing Paradigms
Dental Caries Management in the XXI Century

1- Is dental caries an infectious disease?
2- Is dental caries a transmittable disease?
3- How fluoride works on caries control?
4- Is dental caries a biosocial disease?

6- Conclusions

The achievements by Cariology have not yet translated either to the clinic practice or at community level because the different actors are not playing together with one only aim, the oral health care!

Will it change? When? How?
6- Conclusions

When?

1- ..most of traditional Professors of Restorative Dentistry and Preventive Dentistry retire? and...

2- Also, when most of revolutionary Cariologists retire? but...

3- Have we a new generation that understands and advocates the need for new strategies in the management of dental caries?

“Although it is very difficult teach new home ways to an old donkey, it is never too late to mend!”

Cury JA, 2009
How?

I hope that this conference hold in the most beautiful city (marvelous!) of the world has a simple solution ...
Dental caries is a biofilm-sugar dependent disease
“Caries Free” 12-year old children

(%)

Thank you !!!

Fluoride

10

1990

40

2003

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