Epidemiology of Dental Caries

By
Dr. Asgari
The following ages and age groups are recommended for permanent teeth:

12, 15, 35-44 and 65-74 years.
The measurement of Caries

- DMFT (Decayed, Missing, or Filled Permanent Teeth Index)

DMFT = Decayed teeth + Missing teeth due to caries + Filled teeth

D: دندانهای پوسیده
M: دندانهای کشیده شده به دلیل پوسیدگی
F: دندانهای پرشده به دلیل پوسیدگی
تغییرات شاخص DMFT در جمعیت کودکان ۱۲ ساله در کشورهای توسعه یافته و در حال توسعه در سال‌های ۱۹۸۰ تا ۱۹۹۸.

**Figure. 7: Changing levels of dental caries experience (DMFT) among 12-year-olds in developed and developing countries**

**شایعه ۷: تغییرات شاخص تجربه سوء کبدی دندانی (DMFT) در کودکان ۱۲ ساله در کشورهای توسعه‌یافته و در حال توسعه در سال‌های ۱۹۸۰ تا ۱۹۹۸.**

**منابع:** Dr. Poul Erik Petersen, World Health Organization
Dental caries is still a major oral health problem in most industrialized countries, affecting 60-90% of schoolchildren and the vast majority of adults.

It is also a most prevalent oral disease in several Asian and Latin American countries, while it appears to be less common and less severe in most African countries.
Currently, the disease level is high in the Americas but relatively low in Africa.

In light of changing living conditions, however, it is expected that the incidence of dental caries will increase in many developing countries in Africa, particularly as a result of a growing consumption of sugars and inadequate exposure to fluorides.
In many developing countries, access to oral health services is limited and teeth are often left untreated or are extracted because of pain or discomfort.

Throughout the world, losing teeth is still seen by many people as a natural consequence of ageing.

While in some industrialized countries there has been a positive trend of reduction in tooth loss among adults in recent years.
Dental caries levels (DMFT) of 12-year-olds worldwide (2003)
Dental caries levels (DMFT) of 35-44-year-olds worldwide (2003)
توزیع پوستیدگی بر اساس نوع دندان

permanent dentition
Deciduous dentition
توزیع پوسیدگی بر اساس سطوح دندانی

- Occlusal > interproximal > buccal
تغییر مدل توزیع پوشیدگی در جوامع

Polarization

قطبی شدن توزیع یا

درصد کمی از جمعیت دارایی شاخص پوشیدگی بالایی هستند و بار پوشیدگی جمعیت را این گروه به دوش می‌کشند
Table 1. Dental Caries indices and prevalence of caries severity in 12-19 Iranian schoolchildren

<table>
<thead>
<tr>
<th>Age group</th>
<th>Mean DMFT (SD)</th>
<th>Mean DT (SD)</th>
<th>Mean MT (SD)</th>
<th>Mean FT (SD)</th>
<th>Caries free in percent</th>
<th>DMFT ≥ 4 in percent</th>
<th>DMFT ≥ 7 in percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>12-14</td>
<td>2.84(2.4)</td>
<td>2.05(2.1)</td>
<td>0.17(0.3)</td>
<td>0.58(1.2)</td>
<td>17</td>
<td>36</td>
<td>8</td>
</tr>
<tr>
<td>14-17</td>
<td>4.88(3.4)</td>
<td>3.37(2.9)</td>
<td>0.2(0.7)</td>
<td>1.26(2.3)</td>
<td>11.6</td>
<td>62</td>
<td>33</td>
</tr>
<tr>
<td>17-19</td>
<td>6.28(3.9)</td>
<td>4.71(3.4)</td>
<td>0.21(0.63)</td>
<td>1.43(2.4)</td>
<td>10</td>
<td>74</td>
<td>49</td>
</tr>
<tr>
<td>Total</td>
<td>4.85(3.6)</td>
<td>3.51(3.1)</td>
<td>0.2(0.7)</td>
<td>1.15(2.1)</td>
<td>12.5</td>
<td>60</td>
<td>33</td>
</tr>
</tbody>
</table>

Fig. 1. The histogram Graph of DMFT distribution in 12 to 19-years-old schoolchildren in Isfahan, Iran.
Epidemiology of Periodontal Disease

By
Dr. Asgari
Periodontal Disease in Public Health

- Dental caries and periodontal diseases have historically been considered the most important global oral health burdens.
- Periodontal disease is associated with general health conditions such as cardiovascular disease and diabetes.
- Focus of studies in population:
  - gingivitis and chronic periodontitis.
  - Relationship between gingivitis and dental plaque.
  - Effective periodontal disease prevention like Plaque control and oral hygiene instruction.
Periodontal disease: A public health problem or not?

- Gingivitis and moderate chronic periodontitis?
- Severe chronic periodontitis?

Public Health problem

- Disease should be widespread
- It should have severe consequences
- Effective method to prevent
- The cost to the community & individual is great.

(sheiham1991,2002)
• مسواک زدن کودکان زیر ۷ سال با نظارت والدین
• روشهای مسواک زدن مناسب برای هر گروه سنی آموزش داده شد
• استفاده از نخ دندان و مسواک‌های بین دندانی با استفاده از آموزش افراد حرفه‌ای
• استفاده از سایز مناسب مسواک با تعویض در زمان مناسب

Key health education message
Etiology

- Dental plaque
- Smoking
- Systemic disease (diabetes, HIV)
- Genetic disorders
- Stress
- Factors predisposing to plaque accumulation
## Risk of periodontal disease

<table>
<thead>
<tr>
<th>Oral hygiene levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobacco smoking</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
</tr>
<tr>
<td>Genetic factors</td>
</tr>
<tr>
<td>Socio economic status</td>
</tr>
<tr>
<td>Osteoporosis</td>
</tr>
<tr>
<td>Stress</td>
</tr>
<tr>
<td>Race/ethnicity</td>
</tr>
</tbody>
</table>

**Intraoral and dental risk factors**
Importance of tobacco smoking

- In industrialized countries, studies show that smoking is a **major risk factor** for adult periodontal disease, responsible for more than half of the periodontitis cases in this age group.
- Risk decreases when smokers quit, and the prevalence of periodontal disease has decreased in countries experiencing reductions in tobacco use.
Preventive strategies for periodontal disease

- Whole population strategy
- High-risk strategy
Common risk factor approach

- A core group of modifiable risk factors is common to many chronic diseases and injuries.
- Studies have suggested that oral diseases (e.g. dental caries and periodontal disease) are associated with other non communicable diseases.
- The greatest burden of *all diseases is on the disadvantaged and socially marginalized*
Epidemiology of periodontal disease in Iran

<table>
<thead>
<tr>
<th>Table 5</th>
<th>The percentage distribution of CPI scores according to residential location in 2001–2002 (^{14})</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>15–19 years</td>
</tr>
<tr>
<td>Urban (n=5133)</td>
<td>9.9</td>
</tr>
<tr>
<td>Rural (n=3668)</td>
<td>7.8</td>
</tr>
<tr>
<td>Total (n=8801)</td>
<td>8.85</td>
</tr>
</tbody>
</table>

|         | 35-44 years | Score 0 | Score 1 | Score 2 | Score 3 | Score 4 |
| Urban (n=5122) | 1.2 | 6.6 | 39.5 | 42.4 | 103.0 |
| Rural (n=3619)  | 1.2 | 3.6 | 42.7 | 42.8 | 9.4 |
| Total (n=8741)  | 1.2 | 5.1 | 41.1 | 42.5 | 10.0 |
با تشکر از توجه شما