
بسم الله الرحمن الرحيم

Community Dentistry Third class

Dental Indices

7th lecture
2020_ 2021

By Dr. Adil Ghalib Fadhil
College of Dentistry
University of Basrah

Objectives

1. Define dental indices
2. Uses of dental indices
3. Classification
4. Periodontal indices

INTRODUCTION

To compare the health status of different people and the same people at different times, it is necessary to measure a condition. However this measurement must be based on standardized and agreed set of guidelines. measurement of diseases are done using INDICES

Oral health is a part of general health. Dental diseases are the most prevalent and the most neglected of all chronic diseases affecting mankind. Prevention of disease rests on knowledge of the disease occurrence, distribution, etiology, and other related factors. Epidemiological study of any disease require the condition be measured and quantified accurately based on scientific principles to understand the disease.

INDICES

Index is defined as a numerical value describing the relative status of a population on a graduated scale with definite upper and lower limits, which is designed to permit and facilitate its comparison with other population classified by the same criteria and methods.

(is a means of converting a clinical diagnosis into a comparable statistics).

Properties of an ideal index

1. **Clarity:** The examiner should be able to carry out the index rules in his mind.,

   Simplicity: The index should be easily to apply, so there is no undue time lost during examination.

   and objectivity: The index criteria should be clear and unambiguous,

2. **Validity:** The index should be measure what it is intended to measure.it should accurately reflect the extent or degree to which the condition or disease is present, ex. number of missing teeth in adults is not a valid measure of caries activity.

3.Reliability: The index should measure consistently at different times and under a variety of conditions, if a researcher examined the same patient with the same condition multiple time, each times the score or result would be the same.

4.Quantifiability: The index should be amenable to statistical analysis. So that the status of a group can be expressed by a number that corresponds to a relative position on a scale from zero to the upper limit.

5.Sensitivity: The index should be able to detect reasonably small shifts, in either direction in the group condition.

6.Acceptability: The use of the index should not be painful or demeaning to the subject.

Uses of dental indices:

1. To provide data for epidemiological studies.
2. To study and compare oral health status of individuals and population.
3. To study prevalence, incidence, and severity of disease.
4. To find out etiological and predisposing factors for the diseases.
5. For planning of oral health policy.
6. To evaluate the success and effectiveness of preventive programs.

TYPE OF INDICES

1)**Based upon the direction** in which their scores can fluctuate, Indices are classified as either reversible or irreversible.

A) REVERSIBLE

Index that measures conditions that can be changed. Reversible index scores can increase or decrease on subsequent examinations. eg: Indices that measure periodontal conditions (gingival index) GI.

B) IRREVERSIBLE

Index that measures conditions that will not change. Irreversible index scores, once established cannot decrease in value on subsequent examinations.

eg. An index that measures dental caries DMF

2) **Depending upon the extent** to which areas of oral cavity are measured.

Indices are classified into ‘Full mouth’ or ‘simplified’

A) FULL MOUTH

These indices measure the patient’s entire periodontium or dentition.

eg: Russel’s Periodontal index

B) SIMPLIFIED INDEX

These indices measure only a representative sample of the dental apparatus.

e.g: Oral Hygiene Index- Simplified (OHI-S)

3)Indices may be classified in certain general categories according to the entity which they measure like:

a) **Disease index:** The D (decay) portion of the DMF index best exempl of a disease index.

b) **Symptom index:** The indices measuring gingival/ sulcular bleeding are essentially symptom indices

c) **Treatment index:**

The F(filled) portion of the DMF index best exemplifies a treatment index.

4) Dental indices can also be classified under special categories as:

A) SIMPLE INDEX

Index that measures the presence or absence of a condition.

e.g: An index that measures the presence of dental plaque without an evaluation of its effect on gingiva.

B) CUMULATIVE INDEX

Index that measures all the evidence of a condition, past and present.

e.g: DMF index for dental caries

periodontal indices

1) <u>Plaque Index (PI)</u> …

which was introduced by Silness and Loe in 1964

-Used together with GI, and should be preceded the gingival examination.

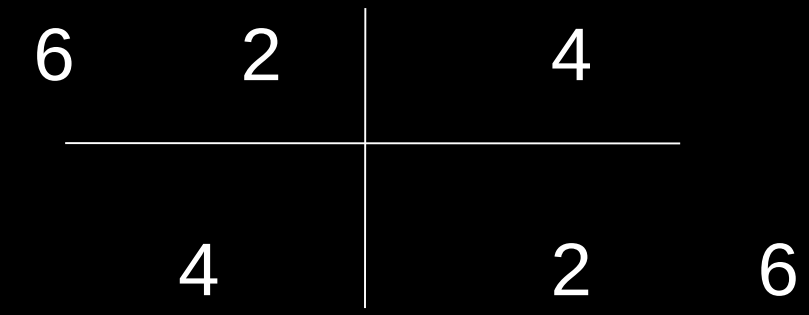
-Used on all teeth (28, so wisdom teeth are excluded) or selected teeth (6) .

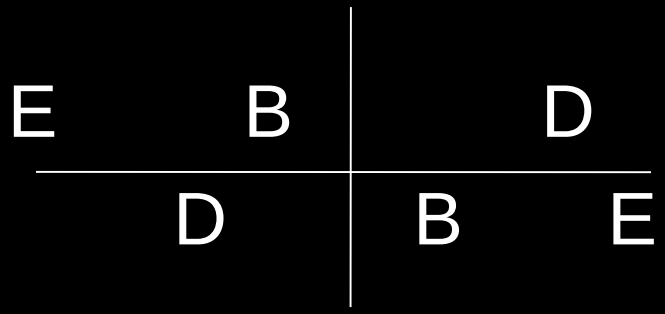
-No substitution for any missing tooth.

-Used on all surfaces,(distal, facial or buccal, mesial and lingual), Or selected surfaces(M, B, L).

-This index measures the thickness of plaque at the cervical margin of the tooth (on the gingival one third).

-The six index teeth are:





- Each tooth is dried and examined visually using a mirror, an explorer and adequate light. The explorer is passed over the cervical third to test for the presence of plaque.
- Each of the four surfaces of the teeth is given a score from (0 to 3)
- The scores from the four surfaces of the tooth are added and divided by four in order to give the plaque index for tooth with the following criteria

Score	Criteria
0	No plaque
1	A film of plaque adhering to the free gingival margin and adjacent area of the tooth, which can not be seen with the naked eye. But only by using disclosing solution or by using probe.
2	Moderate accumulation of soft deposits within the gingival pocket, or the tooth surfaces and gingival margin and, which can be seen with the naked eye.
3	Abundance of soft matter within the gingival pocket and/or on the tooth and gingival margin.

Calculation:

1- Individual:

$$PI = \frac{\text{Total scores}}{\text{No. of surfaces examined}}$$

2- Population:

$$PII = \frac{\text{Total scores}}{\text{No. of subjects examined}}$$

Interpretation of PI scores

Four rating may be assigned: •

0 = Excellent oral hygiene

0.1- 0.9 = Good oral hygiene

1- 1.9 = Fair oral hygiene

2-3 = poor oral hygien