

ORAL HEALTH STATUS ASSESSMENT INDICATORS IN A CHILD DENTAL PATIENT

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SUMMARY:

In order to provide good quality dental care the pediatric dentist must assess each patient's oral health, to foresee the risk of any possible changes in oral health and to take measures for its improvement. The oral health status should be assessed with appropriate indicators, as well as to be recorded using a clinical form.

The aim of this study was to suggest basic indicators of oral health status assessment in a child dental patient and to create a clinical form for documenting the oral status examination information.

A documental research of the available Bulgarian and foreign literature presenting the variety of indicators of oral health assessment and clinic forms for recording the related information was carried out. An analysis of all contemporary documents of different dental organizations regulating oral health assessment in children was done.

As a result of the study the basic indicators of oral health status assessment in a child dental patient were identified. All the indicators and the related information were included in the newly created clinic form.

The current trend in pediatric dental medicine is the unification of oral health status basic indicators. It is possible to change the indicators in order to update and compare them.

Key words: oral health status, indicators, clinical forms

INTRODUCTION:

In order to provide good quality dental care the pediatric dentist must assess each patient's oral health, to predict the risk of any possible changes in oral health and to take measures for its improvement. The oral health status assessment is a step in the oral health assessment, which takes place during the oral examination. The oral health status should be assessed following exact and generally valid indicators, as well as to be recorded using the appropriate "tool" - a clinical form for documentation of comprehensive oral health information.

AIM:

To suggest basic indicators of oral health status assessment in a child dental patient and to create a clinical

form for documenting the oral status examination information

MATERIAL AND METHODS:

A documental research of the available Bulgarian^{1, 2, 3, 4, 5, 6} and foreign literature^{8, 9, 10, 12, 13, 14, 17, 19, 20, 21, 22, 23, 24, 25, 26, 28, 29, 30} was carried out, presenting the variety of indicators of oral health assessment and clinic forms for recording the related information. An analysis of all contemporary documents of different dental organizations (EAPD, AAPD, WHO, etc.)^{7, 11, 15, 16, 18, 27, 31} regulating children's oral health assessment was done. In the process of creating a Bulgarian clinical form for recording the oral status information the Bulgarian and the foreign experience was summarised.

RESULTS AND DISCUSSION:

As a result of the study the basic indicators of oral health status assessment in a child dental patient were identified. The indicators were divided into the following groups: indicators related to the extraoral status (face, lips and lymph nodes assessment), indicators related to the intraoral status (assessment of the oral mucosa and palate, gingiva and periodontium, dental status and occlusion) and additional indicators (assessment of esthetic, child behaviour and oral parafunctions). **(Fig.1)**

The basic indicators in relation to **extraoral status** assessment are: face asymmetry, skin lesions on the face and body, mucosal lesions on the lips and localized lymphadenitis.

The basic indicators in relation to **intraoral status** assessment are separated into following groups:

1. Indicators for oral mucosa and palate assessment

This group includes: colour, swelling and lesions on labial and buccal mucosa, tongue, floor of the mouth, hard and soft palate, tonsils and uvula, as well as fraenal attachment.

2. Indicators for gingiva and periodontium assessment

2.1. Gingival status

Gingival status indicators are: colour, moisture, consistency, texture and lesions on the gingiva, as well as the status of gingival margin and interdental papillae.

2.2. Periodontal screening

It assesses and codes for the presence of bleeding, calculus and periodontal pockets. The European Global Oral Health Indicators Development (EGOHID) Full Standard Clinical Survey Assessment recommends for the periodontal health assessment to use and record The Community Periodontal Index (CPI).

This index is known as The Basic Periodontal Examination (BPE) in UK and as Periodontal Screening and Recording (PSR) in USA. According to EGOHID periodontal assessment using CPI is recommended only in children over the age of 12. In order to avoid scoring the deepened sulci associated with eruption as periodontal pockets, it is appropriate to record only presence of bleeding and calculus for children aged 12 to 15 years. Pocket depths should be recorded only for children aged 16 to 18 years.

The CPI codes are:

0 = Healthy

1 = Bleeding observed, directly or by using a mouth mirror, after probing

2 = Calculus detected during probing, but pocket 3mm or under.

3 = Pocket 4-5 mm

4 = Pocket 6mm or more.

X = Excluded sextant (less than two teeth present)

* = Furcation or recession + probing depth = 7 mm

If CPI codes 1 or 2 are detected, then the examiner should assess plaque and calculus accumulation using the Oral Hygiene Index-Simplified (OHI – S) by Greene – Vermillion and gingival bleeding using Papillary Bleeding Index (PBI) by Saxer – Muhleman or Gingival index (GI) by Lue – Silness. If CPI codes 3, 4 or (*) are detected, besides these indices the examiner should consider radiographs and subsequent full periodontal examination (**Fig. 2**).

A detailed or full periodontal examination includes: probing pocket depths, clinical attachment levels, suppuration, recession, mobility, bone loss and furcation involvement.

3. Indicators for dental status assessment

According to EGOHID dental status assessment includes: all present and missing teeth, carious process and carious lesions, restorations and sealants and dental fluorosis. To diagnose the caries disease and to record the dental status EGOHID recommends using International Caries Detection and Assessment System (ICDAS). Each tooth surface should be visually assessed and allocated an appropriate two digit ICDAS code. This is constructed from the individual numerical codes (**Table 1**).

There are nine restoration codes (0-8) corresponding to the presence or absence of a restoration/sealant on individual tooth surfaces. For each surface only one of the nine codes should be selected as appropriate and recorded

as the first digit of the two digit ICDAS code. The second digit of the ICDAS code highlights the presence or absence of coronal caries on individual tooth surfaces - the higher the code, the more extensive the lesion. There are also three missing teeth codes and one letter code for the presence of an implant.

We suggest also **additional indicators for dental status assessment**, which are:

- Dental dysplasiae (hypoplasia, hypomineralisation, pigmentation)
- Erosion, abrasion, attrition
- Abnormalities in shape, size and number of the teeth
- Dental trauma (contusion, subluxation, luxation, intrusion, extrusion, avulsion, crown and/or root fractures)
- Space maintainers and orthodontic appliances
- Retained dental roots
- Prosthetic restorations

4. Indicators for occlusion assessment

The basic indicators related to occlusion are:

- Angle's classification – Class I, II or III
- Overbite
- Overjet
- Crowding of teeth
- Open bite
- Cross bite
- Other (edge-to-edge bite, end-to-end bite, underjet)

We suggest the following **additional indicators** for oral health status assessment:

1. Indicators for esthetic assessment – esthetically unacceptable restorations, diastema/spaces, stains or discolorations, soft tissue aberrations (gingival recession, post-surgery defects, abnormal frenum attachment, clefts, scars, hyperplasia, skeletal aberrations (mandibular prognathism, mandibular retrognathism, skeletal open bite, mandibular asymmetry).

2. Indicators for child behaviour assessment – definitely negative, negative, positive and definitely positive.

3. Indicators for oral parafunctions assessment – grind/clench teeth, bite cheek, tongue thrust, mouth breathing, bite nails and finger sucking.

All the indicators and the related information were included in the newly created clinic form, which was called „Oral health status“ form for children (**Fig. 3**).

CONCLUSION:

The standardization of the basic oral health status indicators and calibrating among the researchers is a current trend in pediatric dental medicine. The use of identical indicators for evaluation of important information related to the oral health, as well as its identical way of gathering by the researchers, permits comparison and analysis of the

information.

The design of the created clinic form for recording the information from the oral examination allows:

- gathering and filing thorough information by consisting all indicators related to the oral health represented above
- timesaving while being filled in
- minimal possibility of committing errors

- maximum help in planning the appropriate preventive and treatment plan.

All these indicators served as a basis for creation of contemporary electronic system (computer software program) for recording and assessment of children's oral health.

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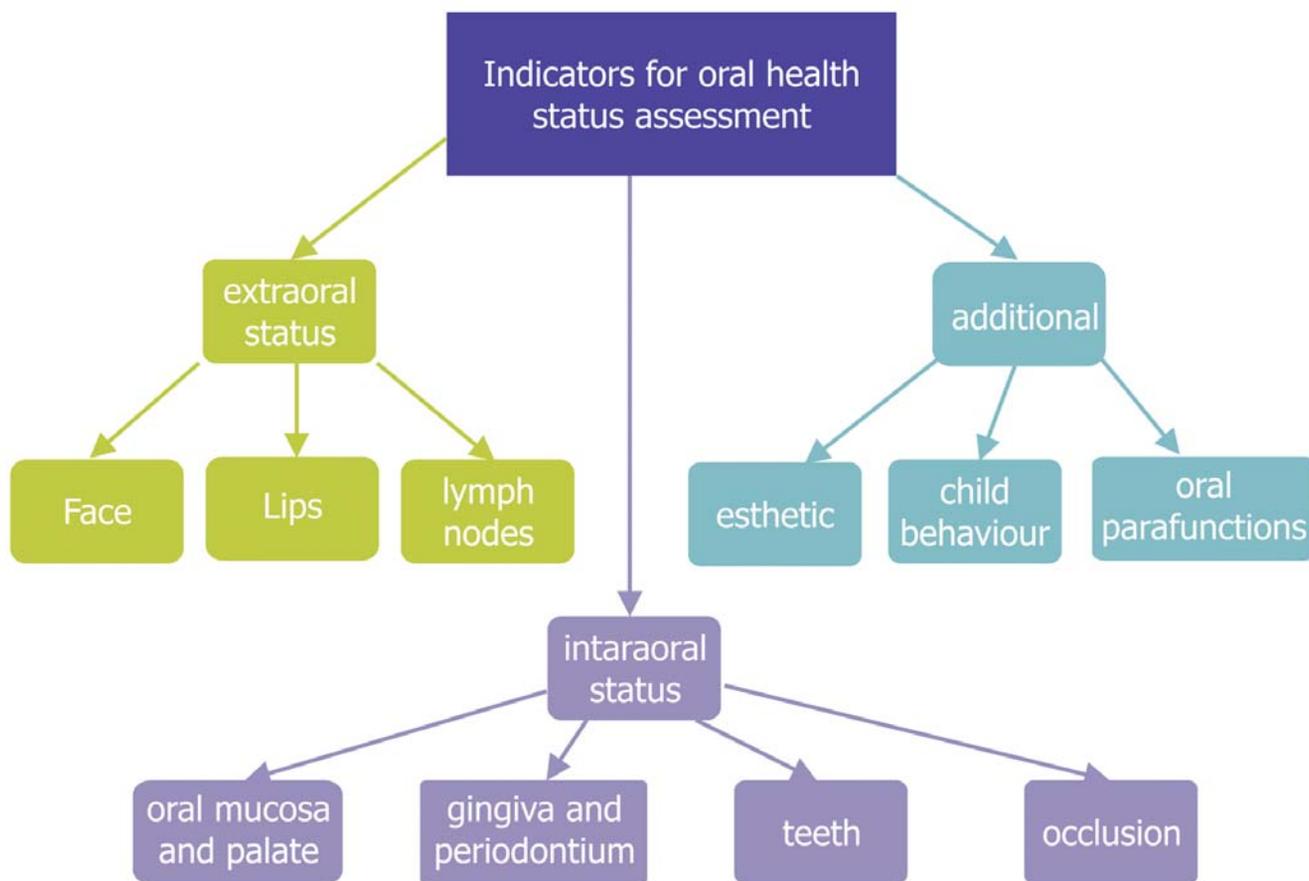


Fig. 1. Oral health status assessment indicators

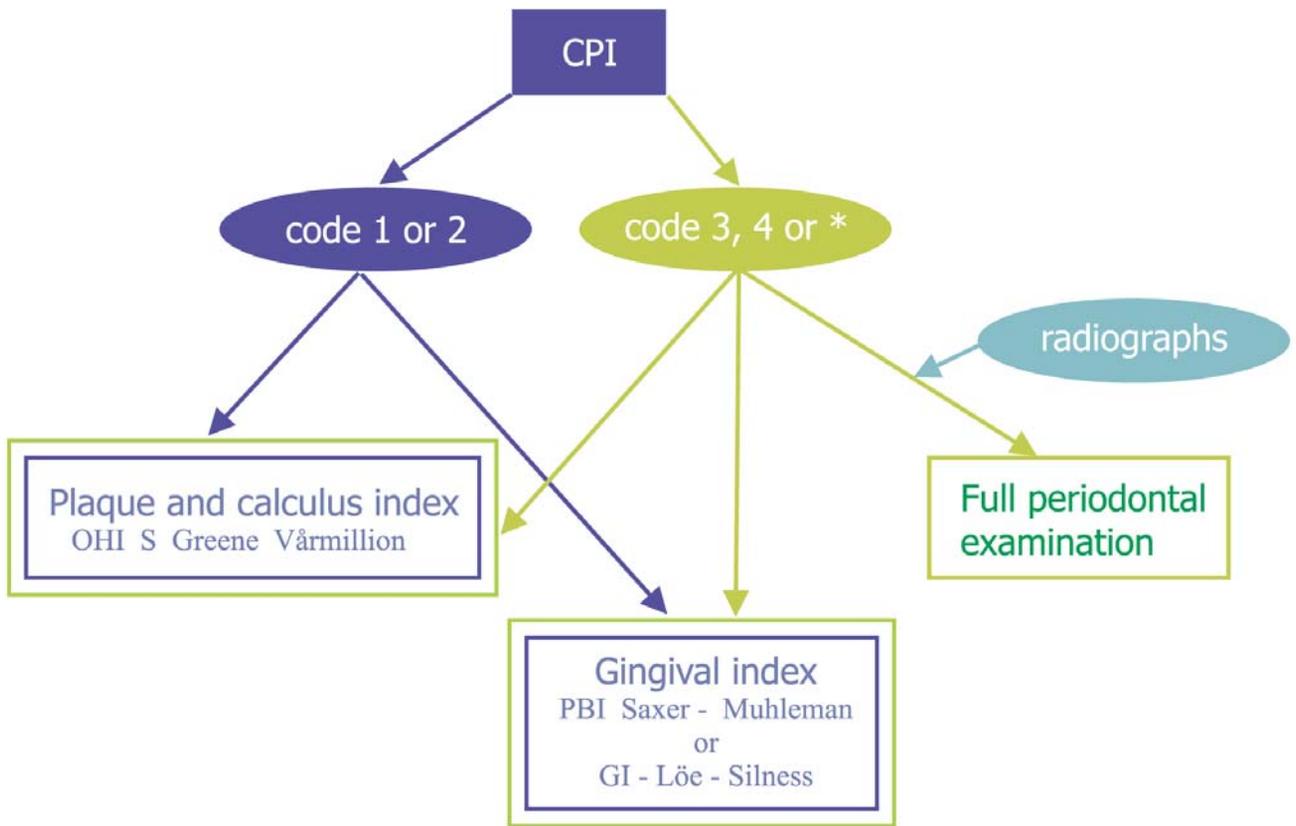


Fig. 2. Decision tree for periodontal assessment after periodontal screening

<p>Restoration and Sealant Codes</p> <p>0 = Not sealed or restored 1 = Sealant, partial 2 = Sealant, full 3 = Tooth coloured restoration 4 = Amalgam restoration 5 = Stainless steel crown 6 = Porcelain, gold, PFM crown or veneer 7 = Lost or broken restoration 8 = Temporary restoration</p>	<p>Caries Codes</p> <p>0 = Sound tooth surface 1 = First visual change in enamel 2 = Distinct visual change in enamel 3 = Enamel breakdown, no dentine visible 4 = Dentinal shadow (not cavitated into dentine) 5 = Distinct cavity with visible dentine 6 = Extensive distinct cavity with visible dentine</p>
<p>A 2-digit code should be used unless a code 'P' is indicated</p>	<p>Missing Teeth</p> <p>97 = Extracted due to caries 98 = Missing for other reason 99 = Unerupted P = Implant</p>

Table 1. ICDAS Codes

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