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# Oral health education: An incentive towards quality life enhancement in the case of Romanian poor children

Laura Stef *, Anca Fratila, Mona Ionas

*"Lucian Blaga" University , Faculty of Medicine, str. Lucian Blaga nr.2A,Sibiu, Romania*

**Abstract**

The aim of this research was to provide empirical educational means and methods of oral hygiene improvement, still a dramatic social reality among Romanian poor school pupils (N= 75). In the first step the initial health condition in terms of Oral Hygiene Index (OHIS) was evaluated, whereas the second step was represented by the education for health practice materialized into a visual - auditive demonstration. After six months, in the third step, the oral hygiene status was recalculated. Our findings revealed an enhancement of oral hygiene condition among socially deprived pupils, whose receptivity level during the learning process was higher than of pupils coming from families with better social and economic status.



*Keywords:* Education, health, oral management, poor pupils, Romania.

## 1. Introduction

Nowadays, it is commonly accepted that oral health represents an integrative part of human health condition. Despite this truism, the addressability and accessibility to medical services of Romanian children from low-income families is bounded. Around 60-90% of the school children and almost 100% of the adults worldwide present evidence of the carious disease. The risk factors for oral affections include: unhealthy diet, consumption of tobacco and abuse of alcohol, deficient oral hygiene and social conditions (WHO, 2012).

The complementarity between basic medical services of dental care and the educational services in schools and families may lead to very good results. For the children coming from poor families, the role of the family in the education for oral health must be taken by the stomatologist.

Making children aware of the importance of maintaining a correct dental hygiene, of using visual, demonstrative methods about brushing techniques adjusted to their age often have spectacular results, even better than in the case of children without money problems. In the latter case, pupils are not always informed about their health (Mârza, 2009). For this reason the education for sanogenic behavior in the case of the children coming from deprived social environments has long term benefices, given its oncopreventive role. (Hanganu, 2002)

Corresponding Author: Laura stef, Tel: +23 444747839 Laura Stef,
*E-mail address*: laura.stef @ulbsibiu.ro


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Following the causality link ”health for all” – reducing social inequalities, we intended a reorientation of health problems towards orodental health promotion. Therefore, the aim of this article is to present the status of oral

hygiene for children coming from low-revenue families, before and after the application of educational methods for oral health.

## 2. Materials and methods

### *2.1. Participants*

This study was carried on two groups of children of school ages who came to a private dental medicine cabinet for consultancy and treatment, between 2003-2007, as follows:
The target group is represented by a number of 75 children, 39 girls and 36 boys with aged between 6 and 18, coming from poor families.
The criteria for inclusion in the study were the social ones, namely children coming from low-income families who live together with their parents and 2-3 brothers in a 16 sqm room, with access to a restroom for several families.
The witness group comprises 81 children of the same age, 42 girls and 39 boys, without social problems.

### *2.2. Procedure*

For all children the following steps have been taken:

Step 1: initial assessment of the state of hygiene – analysis of the bacterial plaque and determination of the plaque index.

Step 2: educational lesson in oral health; instructions for tooth brushing

Step 3: reevaluation of oral hygiene conditions after a 6-month period

In the hygiene evaluation period, the OHIS index has been used, out of which the DI-S has been extracted (Olteanu D., Patroi G., Cuculescu M., 1996).

The analysis of the bacterial plaque has been made by touching the teeth with 1% methylene blue, a cheap and non-toxic dye that can be removed after a correct brushing.

Coloring has a strong visual impact on children, being a highly effective means in instructing the patient about the correct and individual brushing technique.

The aims of these actions were:

1. The awareness of the patient on the existence of the bacterial plaque
2. Motivating actions of professional hygiene
3. To check the efficiency and the correctness of brushing

***Step 1:*** Calculating the indexes of oral hygiene:

For the target group the IP1 plaque index was of 1,58, meaning a moderate hygiene. For the witness group the index was considerably smaller, 1,20, which also means a moderate hygiene, but better.

***Step 2:*** The education lesson for oral health; dental brushing instructions:

The health education is the main means of forming healthy habits and it may determine behavioural and attitude changes towards individual health. (Buzea C., 2011). In the educational process the necessity of permanent communication is compulsory (Moraru, 2003).

The methods for accomplishing health education may be auditory, visual, audio-visual and mass-media. Starting from the truth synthesized by a Chinese proverb: ”I listen and forget, I see and remember, I do and learn”, one may notice that the maximum efficiency in the education act is obtained in the dental medicine cabinet, through demonstrations and practical labour. Learning is easier in an environement where patients are accepted and respected. Children should be encouraged during the process of learning these techniques, and never be hastened or

teased if they made mistakes. Active involvement helps the patient to learn faster and remember longer. For school aged children with poor money conditions from the district of Sibiu, Romania we prefered to use individual or small group instructing (3 children at most) in the dental medicine cabinet. The modified BASS technique has been exemplified, being efficient and easy to understand by children.( Poyato-Ferrera M, 2003) Children coming from poor families received tooth brushes and tooth paste for the whole assessment-reassessment period

The prophylaxis assistant works directly with the patients, individually or in small groups, therefore she must be responsive to children's demands and tactfully accept the help she provides. In fact, the educational process represents the motivational source of the sanogenic behavior, realized through the acquisition of new knowledge which develops conceptions and later, new values (Christen A G., 1984). Instructing and brushing activities may be carried out individually or in schools.

***Step 3:*** Reassessment of dental hygiene after a 6-month interval from the demonstration of the brushing technique

During all this interval, the children of the two groups were monitored and treated in the cabinet. Therapeutical labours of were performed in order to seal the cure treatments of odontal reconstructions, endodontic treatments as well as surgery treatments (extractions of irrecuperable remainings) with a view to draining the oral cavity.

At reassessment, the final IP for the target group was 1. 28, as compared to the final IP, which was 1.209. For statistical interpretation of the hygiene parameters *Independent-Samples t- Test* was used. (SPSS)

## 3. Results and debates

Our findings revealed differences related to gender, age, cognitive abilities and socio-cultural, family and educational milieu emphasized that learning become easier in an environment where patients are accepted and respected, an evidence that conduced us to a reconversion of the intervention plan among socially marginalized communities.

Table 1. Average hygiene index according to age levels - group comparison

| | Average target group | Standard deviation target group | Average witness group | Standard deviation witness group | t | p |
|---|---|---|---|---|---|---|
| | | | Groups | | | |
| DI-S 1 | 1.588 | .623 | 1.530 | .553 | .623 | .534 |
| DI-S 2 | 1.128 | .510 | 1.209 | .537 | -.969 | .334 |
| DIF | .460 | .414 | .322 | .282 | 2.482 | 0.014 |
| | | | Aged between 6-8 | | | |
| DI-S 1 | 1.386 | .749 | 1.589 | .580 | -.726 | .475 |
| DI-S 2 | 1.114 | .672 | 1.289 | .527 | -.690 | .497 |
| DIF | .271 | .330 | .300 | .270 | -.224 | .825 |
| | | | Aged between 9-11 | | | |
| DI-S 1 | 1.487 | .638 | 1.386 | .518 | .524 | .604 |
| DI-S 2 | 1.013 | .525 | 1.105 | .589 | -.480 | .634 |
| DIF | .473 | .388 | .281 | .144 | 2.090 | 0.044 |
| | | | Aged between 12-14 | | | |
| DI-S 1 | 1.474 | .520 | 1.600 | .557 | -.747 | .460 |
| DI-S 2 | .970 | .417 | 1.206 | .499 | -1.650 | .107 |

| | | | | | | |
|---|---|---|---|---|---|---|
| DIF | .504 | .516 | .394 | .384 | .754 | .455 |
| | | Aged between 15-18 | | | | |
| DI-S 1 | 1.758 | .642 | 1.560 | .569 | 1.218 | .228 |
| DI-S 2 | 1.294 | .499 | 1.240 | .545 | .392 | .697 |
| DIF | .464 | .365 | .320 | .299 | 1.603 | .115 |

A noticeable statistical difference may be noticed with boys, between the two groups at the reassessment hygiene index level, meaning that the patients of the target lot obtained a higher decrease of this index, which translates into a better assimilation of brushing techniques as compared to the witness group. The girls in the witness group had initially a lower hygiene index, therefore a better hygiene than the girls coming from the socially disadvantaged group.

By looking at the results one may say that after the brushing demonstration, the girls from the target group improved their hygiene, especially within the age level 9-11. A statistical significant difference may be noticed about the difference between the initial and final hygiene indexes with the girls in the target group.

For both groups, after the brushing instructing one may notice the decrease of bacterial plaque indexes, but with the girls in the target group the decrease was higher, which means that the hygiene was better. One may also notice that at the reassessment the hygiene of the target group was better than that of the witness group, which means that once assimilated the brushing techniques, these children, even coming from poor families, treated more seriously the hygiene habits.

### 4. Brief conclusions

1. The oral hygiene index has been determined initially and after six months of reassessment.
2. The results show that even if the poor children initially had faulty hygiene, in the end their hygiene was better than that of the children of the same age from the control group.
3. Because they were treated with respect and decency and had the necessary means – tooth brush, tooth paste – these children showed interest in oral and general health.
4. We believe that through our work we contributed equally to the increase of these children's self-esteem, as well as to their social inclusion.

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