**"CAROL DAVILA" UNIVERSITY OF MEDICINE
AND PHARMACY, BUCHAREST
DOCTORAL SCHOOL
DENTAL MEDICINE FIELD**

*Oral health profile of schoolchildren in the age group 5-15 years
and identification of preventive and curative measures*

ABSTRACT OF THE PHD THESIS

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Contents

Contextual framework

Oral health is positioned within the global health agenda. In 2019 approximately 3.5 billion people globally suffered from oral cavity diseases, with cavities being the most common dental condition found among children. Dental caries in children is on the rise globally and is one of the biggest community health challenges.

Oral diseases are largely preventable through population-oriented public health measures. Therefore, profiling the oral health status of children and identifying preventive and curative measures remains at all times a key objective of any community oral health promotion strategy.

The research aimed to demonstrate several critical, relevant, and topical aspects of the oral health of Romanian schoolchildren by conducting a detailed analysis of the determinants of oral health and identifying key components that have a possible influence on it. Other key issues covered were the analysis of socio-economic and behavioral determinants, the definition and assessment of the oral health profile of schoolchildren, and the identification of preventive and curative measures that contribute to the promotion and improvement of oral health. The final aim was to develop guidelines for oral health programs initiated in schools.

Working hypothesis and general objectives

The *working hypothesis* from which I started this research was that subjective (parent) and professional, normative (dentist) perceptions of children's oral health status differ, influencing health practices and dental service use in different ways.

The *general objective* of this paper was to identify the oral health profile of schoolchildren in grades 0-8 in Romania, combining two perspectives, that of the adult caring for the child and that of the dentist, based on the general framework provided by the World Health Organization (WHO) and the methodology implemented at national level by the National Institute of Public Health (NIPH), to know the needs of the group analyzed.

To achieve this objective, the following *research directions* have been established:

1. Analysis of adult perceptions of children's oral health, assessing behavioral and social determinants.
2. Analysis of the professional approach, conducting clinical assessment of children's oral health status, and identifying the need for preventive and curative treatment.
3. Comparative analysis between subjective and professional, normative perspectives.

Research methodology

The research was based on the *Methodology* defined by NIPH, P.N.XII. Program "Surveillance, and monitoring of the oral health status of children in schools", subprogram 2.1. "Evaluation of the children's and young people's health status", with information gathered from the eight development regions of Romania. The study was carried out in the period 2022-2023, the database is established at the level of, the Interdisciplinary Center for Research and Development in Dentistry" within the "Organization, Professional Legislation and Management of the Dental Office" Discipline, Department II, Faculty of Dentistry.

In this observational cross-sectional clinical and sociological study, schoolchildren aged 5 to 15 years, enrolled in public primary and secondary schools, where there is a licensed school dental practice and a school dentist, were selected.
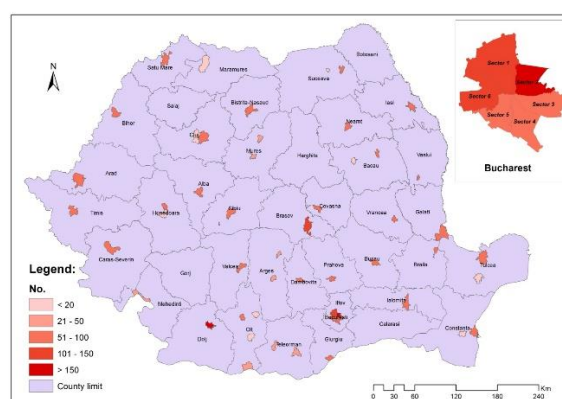
Figure 1. Distribution of participants according to the county where the educational establishment attended is located

Inclusion criteria:

- Signing the agreement for the schoolchild's participation in the study;
- Completion of the questionnaire by the adult;
- Conducting the clinical examination by the dentist;
- The child must be enrolled in a public primary or secondary school, i.e. grades 0-8, where there is an approved dental practice and a school dentist;

Exclusion criteria:

- Refusal to participate in this study - lack of consent signed by the child's legal representative;
- Non-compliance with study stages:
  - Stage I - Signing the agreement on participation;
  - Stage II - Completion of the questionnaire;
  - Stage III - Conducting the clinical examination.
- Age group (under 5 years or over 15 years).

Data were obtained by administering a validated questionnaire to assess the oral health status of the children from the parents' perspective and by clinical examination by the school dentist. Statistical analysis was performed using IBM SPSS Statistics 25 and presented using Microsoft Office Excel/Word 2021.

Before conducting the study, it was submitted to the Scientific Research Ethics Committee of the "Carol Davila" University of Medicine and Pharmacy in Bucharest and received approval with registration number 36987/29 November 2022.

Summary of chapters

The paper contains a part describing the current state of knowledge, *Chapters 1 and 2*, and a part highlighting personal contributions, *Chapters 3, 4, 5, 6, 7, and 8.*

The general part presents the conceptual framework and describes the extent of oral diseases both in the World Health Organization European Region and in Romania, explains the profile of oral health status in Romania, analyses the risk factors for oral diseases, the economic impact of these diseases and the response of the national health system. This chapter also presents the behavioral and socio-economic determinants of oral health and their impact on oral health.

In the second chapter of this part, oral health policies, the structure of the dental system in Romania, and strategies to manage caries risk through specific preventive interventions are highlighted. Also in this section, the possibilities of promoting oral health in schools, through educational interventions carried out in academic institutions, aimed at promoting oral health by teaching the necessary elements of learning, behavioral changes, behavioral changes, motivation, and control, are presented.

The special section briefly outlines the working hypothesis and general objectives of the research (*Chapter 3*); the general research methodology (*Chapter 4*) which includes the general steps of the observational cross-sectional clinical and sociological study to achieve the objectives, highlighting the inclusion/exclusion criteria of participants, the bifocal data collection strategy, statistical analysis tools, and ethical considerations.

Chapter 5: *Schoolchildren's oral health behaviors from a parent's perspective* is an observational sociological study in which parents' perceptions of their children's oral health status, oral hygiene practices, dietary practices, and dental practice referrals were assessed using the questionnaire developed by WHO in 2013 and adapted from an adult's perspective, Step 1. The sample included 3843 participants whose children had an average age of 10.56 ± 2.61 years. The distribution of schoolchildren was relatively homogeneous, with the most common grades for children being 0 grade (12%), 3rd grade (11.7%) and 4th grade (11.2%). The correlation between perceived health status and behavioral and socio-economic determinants is also examined in this chapter.

Qualitative variables were expressed as absolute values or percentages and tested between groups using Fisher's Exact Test. Bonferroni-corrected Z-tests were used to describe the results obtained in contingency tables. The results of this study were published in two articles (A STEPwise Approach for Oral Hygiene Behaviour of Schoolchildren in Romania and Exploring the Threefold Viewpoint on Children's Oral Health in a Cross-Sectional Study, in the journal Healthcare).

There is a statistically significant difference between the level of education and parents' perception of the health of their child's teeth and gums.

Table V.1. Distribution of participants by perceived dental health of children and parent's level of education

Dental/health status Education – M	Primary		Middle		Secondary		University		p*
	No.	%	No.	%	No.	%	No.	%	
Poor	13	16.9%	21	14.5%	78	6.5%	49	2.7%	<0.001
Satisfactory	12	15.6%	16	11%	190	15.7%	177	9.8%	
Good	37	48.0%	72	49.7%	591	48.9%	787	43.6%	
Very good	12	15.6%	27	18.6%	280	23.2%	601	33.2%	
Excellent	3	3.9%	9	6.2%	69	5.7%	194	10.7%	
Dental health status / Education - F	Primary		Middle		Secondary		University		p*
	No.	%	No.	%	No.	%	No.	%	
Poor	8	10.7%	25	17.1%	80	8%	67	3%	<0.001
Satisfactory	8	10.7%	22	15.1%	155	15.5%	245	11.1%	
Good	39	52%	65	44.5%	509	51%	954	43.4%	
Very good	17	22.6%	27	18.5%	199	20%	720	32.7%	
Excellent	3	4%	7	4.8%	55	5.5%	215	9.8%	

missing answers were excluded   *Fisher's Exact Test

The association between schoolchildren's oral health habits and adult education is as follows: children whose parents have primary or secondary education are more likely to engage in inappropriate practices, such as a lack of personal oral hygiene. It is essential for parents to understand that their level of knowledge about oral hygiene has an impact on their children's oral care and therefore on their quality of life.

Table V.2. The distribution of participants reported on child dental hygiene frequency and the level of adult male (M)/female (F) education

Hygiene frequency / Education – M	Primary		Middle		Secondary		University		p*
	No.	%	No.	%	No.	%	No.	%	
Never	2	2.3%	0	0%	2	0.2%	1	0.1%	<0.001
Several times a month	14	16.3%	1	0.6%	11	0.9%	0	0%	
Once a week	8	9.3%	10	6.3%	21	1.6%	13	0.7%	
Several times a week	12	14%	27	17.1%	106	8.3%	121	6.6%	
Once a day	35	40.7%	73	46.3%	550	43%	622	33.7%	
Twice or more a day	15	17.4%	47	29.7%	590	46%	1087	58.9%	
Hygiene frequency / Education - F	Primary		Middle		Secondary		University		p*
	No	%	No	%	No.	%	No.	%	
Never	2	2.3%	1	0.6%	3	0.3%	1	0%	<0.001
Several times a month	11	12.8%	9	5.2%	7	0.7%	2	0.1%	
Once a week	10	11.6%	10	5.8%	17	1.5%	15	0.7%	
Several times a week	13	15.1%	20	11.6%	95	9%	158	7%	
Once a day	31	36%	76	43.9%	469	44.3%	793	35.3%	
Twice or more a day	19	22.2%	57	32.9%	468	44.2%	1279	56.9%	

missing answers were excluded   *Fisher's Exact Test

There was an association between parents with primary/middle school education and children's unhealthy eating habits (eating sweets/soft drinks/biscuits/cakes several times a day).

Another factor influencing the child's oral health is prophylactic check-ups, and a correlation was found between parents with higher education and correct referral to the dentist for regular check-ups, not just when there is a problem/pain in the oral cavity. Looking at the frequency of dental visits in the last 12 months, the data shows that 22.7% of them did not visit a dentist. When analyzing the reason for visiting the dentist, the majority of children who had visited the dentist in the last 12 months reported 'toothache' as a symptom, highlighting the low level of presentation to the dentist and the neglect of oro-dental problems until they become severe.

This study shows that the parents' level of education is reflected in their children's health habits. Based on the identified needs, oral health professionals should provide personalized advice using educational elements adapted to the patient's level of understanding. Thus, it is necessary to raise awareness and inform parents about the determinants of oral health, dietary behavior, proper oral hygiene, and referral to the dentist to encourage their children to adopt

healthy practices. The results underline the importance of including oral health education in the school curriculum.

Chapter 6, Oral Health Assessment from a Normative Perspective, presents an observational cross-sectional clinical study carried out on the same target group, schoolchildren aged 5-15 years, in which the dentist's perspective on oral health status was examined, and the need for preventive and curative treatment was highlighted.

The clinical assessment was carried out nationally by school dentists in the school dental practice following the questionnaire. The examination form used to record the data was the one introduced by WHO in 2013. The records completed by the dentists were collected, entered into an application, and processed, which allowed for the electronic generation of consultation forms and reports. Based on these, the caries indices were calculated automatically, thus minimizing the risk of error.

Qualitative variables were expressed as absolute values or percentages and tested between groups using Fisher's Exact Test. Bonferroni-corrected Z-tests were used to describe the results obtained in the contingency tables. Independent quantitative variables with non-parametric distributions were tested between groups using the Mann-Whitney U test.

When analyzing the caries indices, the "d/D" component has the highest value among the 3 components of the DMFT caries index, indicating that schoolchildren have a high percentage of untreated caries lesions. When the caries indices were evaluated by age group, it was found that the dmft index for the 5-8-year age group and the dmft index for the 12-15-year age group were much too high for the WHO targets. In practical terms, this means that immediate medical intervention is required to treat these lesions.

Another clinically significant element is the presence of gum bleeding. This suggests that almost a fifth of the study population have gum health problems, which may indicate poor oral hygiene due to avoidance of brushing during mixed dentition, the permutation stage, or pre-existing gum disease.

Again, the results of this study show that dental sealants are not commonly used in the population studied, despite being an essential procedure in preventing the development of caries lesions, especially in children and adolescents. However, many parents are not well informed about the benefits of dental sealants. This timely procedure carried out in the first 2 years after tooth eruption, can effectively prevent the development of caries lesions, thus

reducing the need for costly and invasive dental treatment in the long term. Raising awareness can ensure that more children benefit from the advantages of this prophylaxis, contributing to better long-term oral health. Therefore, to reduce the prevalence of caries and improve the oral health of children and adolescents, it is essential to promote and implement dental sealant programs on a large scale.

Table VI.1. Distribution of patients according to the presence of gum bleeding.

Gum bleeding	No.		Percentage	
Absent	3139		81.7%	
Present	704		18.3%	
Parameter	Mean ± SD	Median (IQR)	Min.	Max.
No. of bleeding teeth	6 ± 5.3	4 (2-8)	1	28

In conclusion, the development of an oral health status profile that correlates with dietary and hygiene practices (behaviors), social factors, and impact on quality of life is essential to understanding and assessing the oral health of school children in Romania, to develop community prevention and treatment strategies.

Chapter 7, Dual Perspective of Oral Health Management of Child Patients, presents an observational cross-sectional clinical and sociological study that combines the subjective (parent) and normative (dentist) perspectives and examines the influence of behavioral and socio-economic variables as determinants of oral health, identifying both the needs of the target group and those of the actors supporting and promoting oral health in schools.

Qualitative variables were presented as absolute numbers or percentages. They were tested between groups using Fisher's Exact Test. Bonferroni-corrected Z-tests were performed to elaborate on the details obtained in the contingency tables. Independent quantitative variables with non-parametric distribution were tested between groups using the Mann-Whitney U/Kruskal Wallis H test. Dunn-Bonferroni post-hoc tests were used to refine the results obtained from testing quantitative variables. The results of this study were published in an article (The twofold perspective of schoolchildren's oral health).

This study shows that parents' perceptions of their children's oral health status do not always match the dentist's clinical assessment, with differences in normative treatment needs and perceived health status.
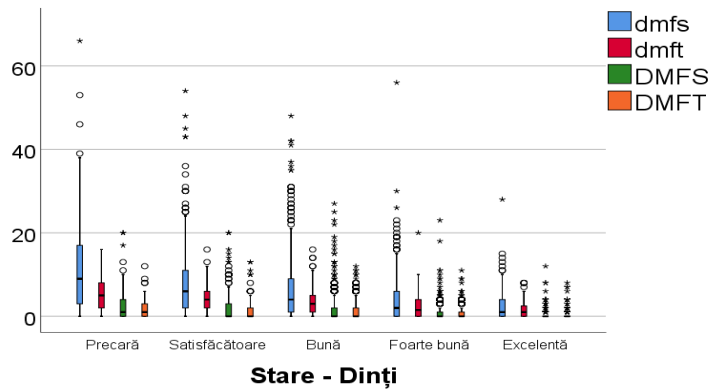
Figure 7.1. Comparison of caries indices about perceived dental health status

Table VII.1. Distribution of children in terms of treatment needs, perceived health status of teeth and gums, and frequency of dental pain

Perceived Status - Teeth / Treatment Needed (No., %)	Absent	Preventive /Curative	Immediate	Urgent	Complete medical assessment	p*
Poor	31(2.4%)	86(5.2%)	42(10.9%)	16(16%)	1(33.3%)	<0.001
Satisfactory	120(9.4%)	242(14.7%)	73(19%)	21(21%)	0(0%)	
Good	534(42%)	784(47.8%)	181(47%)	46(46%)	2(66.7%)	
Very good	459(36.1%)	407(24.8%)	75(19.5%)	15(15%)	0(0%)	
Excellent	128(10.1%)	123(7.5%)	14(3.6%)	2(2%)	0(0%)	
Perceived Status - Gums /Need treatment (No., %)	Absent	Preventive /Curative	Immediate	Urgent	Complete medical assessment	p*
Poor	6(0.5%)	23(1.5%)	17(4.9%)	5(5.9%)	0(0%)	<0.001
Satisfactory	56(4.7%)	118(7.7%)	27(7.8%)	9(10.6%)	0(0%)	
Good	396(33.5%)	617(40.3%)	155(45.1%)	41(18.2%)	3(100%)	
Very good	487(41.2%)	542(35.5%)	101(29.4%)	23(27.1%)	0(0%)	
Excellent	238(20.1%)	230(15%)	44(12.8%)	7(8.2%)	0(0%)	
Frequency - Pain/Need for treatment (No., %)	Absent	Preventive /Curative	Immediate	Urgent	Complete medical assessment	p*
Never	500(39.2%)	465(27.2%)	102(25.1%)	11(9.5%)	0(0%)	<0.001
Rarely	507(39.8%)	743(43.6%)	174(42.9%)	48(41.4%)	2(66.7%)	
Occasionally	241(18.9%)	424(24.8%)	100(24.6%)	34(29.3%)	1(33.3%)	
Often	27(2.1%)	76(4.4%)	30(7.4%)	23(19.8%)	0(0%)	

*Fisher's Exact Test

This discrepancy points to the need for better communication and information to parents about the importance of preventive screening, not just emergency screening. Regular visits to the dentist are essential for the early detection and effective treatment of dental problems, and the dentist plays a key role in monitoring oral health status.

Another variable influencing the oral health status of children is the educational level of their parents.

Table VII.1. Comparing caries rates in children with the educational level of adults

Education level - M / Indices		dmfs	dmft	DMFS	DMFT
Primary education	Mean ± SD	9.76 ± 9.71	4.27 ± 3.34	4.37 ± 7.39	2.61 ± 3.82
	Median (IQR)	8 (2-16)	4 (1-7)	1 (0-6)	1 (0-4)
Middle school education	Mean ± SD	7.73 ± 8.64	3.68 ± 3.09	3.47 ± 6.03	2.33 ± 3.41
	Median (IQR)	5 (2-12)	3 (1-5)	1 (0-5)	1 (0-4)
Secondary education	Mean ± SD	6.33 ± 7.66	3.21 ± 2.9	2.82 ± 4.65	2.02 ± 2.98
	Median (IQR)	4 (1-9)	3 (1-5)	1 (0-4)	1 (0-3)
University education	Mean ± SD	5.46 ± 6.64	2.94 ± 2.84	1.9 ± 4.04	1.43 ± 3.51
	Median (IQR)	3 (0-8)	2 (0-5)	0 (0-2)	0 (0-2)
p*		<0.001	0.001	<0.001	<0.001
Education level - F / Indices		dmfs	dmft	DMFS	DMFT
Primary education	Mean ± SD	10.61 ± 11.74	4.56 ± 3.71	4.18 ± 7	2.67 ± 3.78
	Median (IQR)	6 (2-16)	4 (1-7)	2 (0-6)	2 (0-4)
Middle school education	Mean ± SD	7.79 ± 8.44	3.54 ± 2.84	3.42 ± 6.01	2.2 ± 3.1
	Median (IQR)	6 (1.25-12)	3.5 (1-5)	1 (0-4)	1 (0-4)
Secondary education	Mean ± SD	7.23 ± 8.53	3.54 ± 3.09	3.22 ± 5.54	2.22 ± 3.15
	Median (IQR)	5 (1-10)	3 (1-5)	1 (0-4)	1 (0-4)
University education	Mean ± SD	5.29 ± 6.41	2.87 ± 2.77	1.98 ± 4	1.5 ± 2.62
	Median (IQR)	3 (0-8)	2 (0-5)	0 (0-2)	0 (0-2)
p*		<0.001	<0.001	<0.001	<0.001

*Kruskal-Wallis H Test

Parents with a university education tend to be better informed about the importance of oral hygiene, which is reflected in their children's better oral health. In contrast, children whose parents have only primary or middle school education tend to have poorer oral health. This relationship highlights the importance of education in promoting oral health.

Personal conclusions and contributions

Chapter 8 reports the final conclusions of this doctoral research and presents an oral health promotion strategy for schoolchildren based on an analysis of the vulnerabilities and needs of all involved.

This observational, cross-sectional, clinical, and sociological study provides a comprehensive overview of the oral health status of urban primary and middle school schoolchildren, identifies existing inequalities, and defines the most effective strategies for promoting oral health in schools. A comprehensive profile of the oral health status of school children has been established, thus achieving the overall objective of the scientific research. Variables such as parents' level of education, their views on children's eating habits, oral hygiene and access to oral health services, and the impact of oral health status on social activities were considered.

Analysis of these data allowed significant patterns and correlations to be identified, leading to a deeper understanding of the factors influencing children's oral health at the community level: the level of education of parents, the importance of the existence of school dental clinics, the need for the dentist to be involved in the education of children and parents, in the provision of prophylactic and curative treatment, in the identification of treatment needs and the regular provision of treatment. Another contribution of the research described is to illustrate the contrast between the two approaches - subjective and normative - to oral health. This analysis will establish a balance between the needs identified (oral health education through information, awareness, and motivation) and the actions needed to meet them, identifying the vectors and areas of intervention essential to promote and improve the oral health of schoolchildren, thus contributing to the development of an oral health strategy in schools. The studies have also helped to identify differences in oral health according to parents' educational level, allowing the development of targeted interventions to reduce inequalities and ensure equal access to dental care for all children, thus helping to reduce health inequalities.

In essence, the originality of this study lies in its comprehensive interdisciplinary approach, involving multi-level assessments of a relatively evenly distributed age group. The results of the study illustrate the complexity of promoting oral health in schoolchildren and highlight the multifactorial nature of effective interventions.

Personal contributions: I have developed a conceptual model of oral health promotion for schoolchildren, based on an analysis of identified needs and vulnerabilities, to improve children's oral health. The active involvement of the four key participants - the child, the adult, the teacher, and the school dentist - will ensure the success and sustainability of this approach, contributing to improved quality of life and reduced oral health inequalities. This conceptual model is a starting point for promoting children's oral health. It integrates the many important advances made by the relevant authorities, including a wide range of risk factors and the mechanisms by which they operate.

According to our information, this combination of analyses in a single study has not been done before in Romania. Assessment of children's oral health at the national level is still largely at an early stage and requires further analysis.

This paper offers several *perspectives for further research* and provides a starting point for oral health promotion programs for children enrolled in public schools. The study can be continued by including the children's perspective and analyzing the effect of rurality.

Scientific works published in the field of the doctoral thesis

I have published three scientific articles with IF in ISI journals from the subject of my doctoral thesis.

1. **Perpelea A-C**, Sfeatcu R, Tănase M, Meleșcanu Imre M, Ripszky Totan A, Cernega A, Funieru C, Pițuru S-M. A STEPwise Approach for Oral Hygiene Behavior of Schoolchildren in Romania. *Healthcare* , *12*, 198, 2024. https://doi.org/10.3390/healthcare12020198, Original Article , ISI-indexed *Journal Impact Factor* – 2,8. https://www.mdpi.com/2227-9032/12/2/198

2. **Perpelea A.-C**, Sfeatcu R, Tușaliu M, Tănase M, Meleșcanu Imre M, Ripszky Totan A, Funieru C, Nicolescu DN, Pițuru S-M. Exploring the Threefold Viewpoint on Children's Oral Health in a Cross-Sectional Study. *Healthcare* , *12*, 883, 2024. https://doi.org/10.3390/healthcare12090883, Original Article, ISI-indexed *Journal Impact Factor* – 2,8. https://www.mdpi.com/2227-9032/12/9/883

3. **Perpelea A-C**, Sfeatcu R, Tănase M, Tușaliu M, Dimitriu B, Cernega A, Pițuru S-M. The twofold perspective of schoolchildren's oral health. Romanian Journal of Oral Rehabilitation. Vol. 16, No.1 January-March 2024. DOI: 10.6261/RJOR.2024.1.16.35, Original Article, ISI-indexed *Journal Impact Factor* – 0,7. https://rjor.ro/the-twofold-perspective-of-schoolchildrens-oral-health/

Selective bibliography

1. World Health Organization. Oral Health. Disponibil online: https://www.who.int/health-topics/oral-health#tab=tab_1. [Accessed 28 March 2024].

2. Glick M, Williams DM, Kleinman DV, Vujicic M, Watt RG, Weyant RJ. A new definition for oral health developed by the FDI World Dental Federation opens the door to a universal definition of oral health. *Am J Orthod Dentofacial Orthop*. 2017;151(2):229-231.

3. World Health Organization. Global oral health status report. Geneva: World Health Organization; 2022. Licence: CC BY-NC-SA 3.0 IGO

4. Gussy MG, Waters EG, Walsh O, Kilpatrick NM. Early childhood caries: current evidence for aetiology and prevention. *J Paediatr Child Health*. 2006;42(1-2):37-43.

5. World Health Organization. WHO/Europe calls for urgent action on oral disease as highest rates globally are recorded in European Region. Disponibil online: https://www.who.int/europe/news/item/20-04-2023-who-europe-calls-for-urgent-action-on-oral-disease-as-highest-rates-globally-are-recorded-in-european-region. [Accessed 28 March 2024]

6. Government of Romania. Legislative Portal - National Strategy. Available online: https://legislatie.just.ro/Public/DetaliiDocument/275686. [Accesed 21 March 2024]

7. World Health Organization. Oral Health Country Profile. Disponibil online: https://cdn.who.int/media/docs/default-source/country-profiles/oral-health/oral-health-rou-2022-country-profile.pdf?sfvrsn=6b74cbdc_9&download=true. [Accessed 20 Martie 2024]

8. Health Services Management. Project-Based Approach, Carol Davila University Press, Bucharest, București, 2010

9. Răducanu AM. Pediatric Dentistry Practical Guide. Bucharest, BREN, 2020.

10. Parliament of Romania. Law No. 95 of April 14, 2006, on Health Reform. Official Gazette.

11. National Institute of Public Health. Methodologies. Available online: https://insp.gov.ro/centrul-national-de-supraveghere-si-control-al-bolilor-transmisibile-cnscbt/metodologii/. [Accessed 22 March 2024]

12. Carol Davila University of Medicine and Pharmacy. Oral Health Assessment Questionnaire by Parent. Available online: https://zambetsieducatie.umfcd.ro/. [Accessed 30 April 2024]

13. Early Childhood Caries: IAPD Bangkok Declaration. *Int J Paediatr Dent*. 2019;29(3):384-386.

14. Lee JY, Divaris K. The ethical imperative of addressing oral health disparities: a unifying framework. J Dent Res. 2014 Mar;93(3):224-30.

15. Watt RG. Strategies and approaches in oral disease prevention and health promotion. *Bull World Health Organ*. 2005;83(9):711-718.

16. Widström E, Tillberg A, Byrkjeflot LI, Stein L, Skudutyte-Rysstad R. Community-based preventive activities in the Public Dental Service in Norway. *Int J Dent Hyg*, 2018.

17. Widström E, Ekman A, Aandahl LS, Pedersen MM, Agustsdottir H, Eaton KA. Developments in oral health policy in the Nordic countries since 1990. *Oral Health Prev Dent*. 2005;3(4):225-235.

18. **Perpelea A-C,** Sfeatcu R, Tănase M, Meleșcanu Imre M, Ripszky Totan A, Cernega A, Funieru C, Pițuru S-M. A STEPwise Approach for Oral Hygiene Behavior of Schoolchildren in Romania. *Healthcare*. 2024; 12(2):198.

19. **Perpelea A-C,** Sfeatcu R, Tușaliu M, Dimitriu B, Cernega A, Pițuru S-M.The twofold perspective of schoolchildren's oral health. *Romanian Journal of Oral Rehabilitation,* vol. 16, nr. No.1 January-March 2024, pp. 384-393, 2024.

20. **Perpelea A-C**, Sfeatcu R, Tușaliu M, Tănase M, Meleșcanu Imre M, Ripszky Totan A, Funieru C, Nicolescu DN, Pițuru S-M. Exploring the Threefold Viewpoint on Children's Oral Health in a Cross-Sectional Study. *Healthcare*. 2024; 12(9):883.